

## APPENDIX A

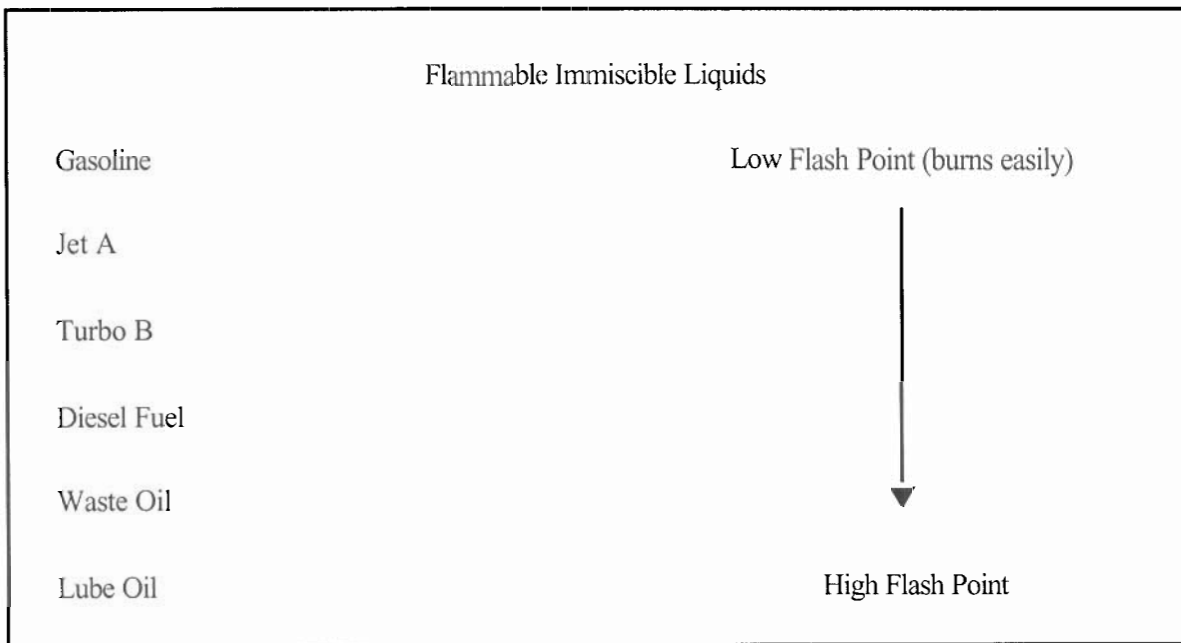
### PRODUCT GUIDES

The materials included in this Plan can generally be divided into two categories:

- flammable immiscible liquids
- flammable compressed gases

#### 1 Flammable Immiscible Liquids

These substances are all hydrocarbon-based and will ignite under certain conditions. Gasoline and aviation fuel pose the greatest fire (and safety) hazard and usually cannot be recovered when spilled on water. The remaining materials generally do not pose a hazard at ambient temperatures. They are all insoluble, float unless mixed into the water column and can be recovered when safety allows.



## DIESEL

### TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Clear, yellow or red	FLASH POINT:	40 °C (minimum)
ODOUR:	Petroleum	POUR POINT:	-50 to -6 °C
SOLUBILITY:	Insoluble	VISCOSITY:	Not viscous
VAPOUR		SPECIFIC	
DENSITY:	Will sink to ground levels	GRAVITY:	Floats on water (0.8 - 0.9)

### SAFETY MEASURES

#### WARNINGS

- Vapours are heavier than air and form easily at high temperatures.
- Empty containers can contain explosive vapours.
- Toxic gases form upon combustion.
- Eye contact causes irritation.
- Material can accumulate static charges.
- Inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.

#### PERSONAL PROTECTION

- Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; nitrile, Viton and PVC are suitable materials (**DO NOT USE NATURAL RUBBER or NEOPRENE.**)
- Wear full-face organic vapour cartridge respirator where oxygen is adequate, otherwise wear positive pressure SCBA.

#### PRECAUTIONS

- Monitor for explosive atmosphere.
- Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozones, peroxides.
- Eliminate ignition sources.
- Restrict access and work upwind of spill.

### RESPONSE TO FIRES

#### CONSIDER ACTION ONLY IF SAFETY PERMITS!

- Wear SCBA in confined areas.
- Shut off fuel supply.
- Extinguish fire with CO<sub>2</sub>, dry chemical, alcohol foam or water fog.
- Use water to cool containers exposed to fire.

**DIESEL  
RESPONSE TO SPILLS  
CONSIDER ACTION ONLY IF SAFETY PERMITS!**

**ON LAND**

- **ELIMINATE IGNITION SOURCES.**
- Do not flush into ditch/drainage systems.
- Block entry into waterways.
- Contain spill by diking with earth, snow or other barrier.
- Remove minor spills with peat moss and/or sorbent pads.
- Remove large spills with pumps or vacuum equipment.

**ON WATER**

- Use booms to contain and concentrate spill.
- Remove spill using sorbent, skimmer or vacuum truck.
- Protection booming can be considered for water intakes.

**STORAGE & TRANSFER**

- Store closed, labelled containers in cool, ventilated areas away from incompatible materials.
- Electrically ground containers and vehicles during transfer.

**DISPOSAL**

- Segregate waste types.
- Place contaminated materials into marked containers.
- Consult with environmental authorities during final disposal.

**FIRST AID**

**EYES**

- Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes while holding the eyelids open.
- Remove contact lenses, if exposed to vapours or liquid.
- Get prompt medical attention.

**SKIN**

- Remove and launder contaminated clothing.
- Wash skin thoroughly with soap and water.
- Get medical attention.
- Discard saturated leather articles.

**INHALATION**

- Move victim to fresh air.
- Perform artificial respiration if victim not breathing.
- Provide oxygen if victim is having difficulty breathing.
- Get prompt medical attention.

**INGESTION**

- **DO NOT INDUCE VOMITING;** if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration.
- **Get prompt medical attention.**

## HYDRAULIC OIL

### TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Straw-yellow liquid	FLASHPOINT:	215°C
ODOUR:	Petroleum	POUR POINT	-25°C
SOLUBILITY:	Generally insoluble	VISCOSITY:	Medium (265cSt @ 15°C )
VAPOUR		SPECIFIC	
DENSITY:	Few vapours emitted	GRAVITY:	Floats on water (0.9)

### SAFETY MEASURES

#### WARNINGS

- Vapours are heavier than air but are unlikely to form.
- Toxic gas can form in fire and at high temperatures.
- CO, CO<sub>2</sub>, and dense smoke are produced upon combustion.
- Oil mist or vapour from hot oil can cause irritation of the eyes, nose, throat and lungs.

#### PERSONAL PROTECTION

- Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; PVC, Nitrile, and Viton are suitable materials (**DO NOT USE NATURAL RUBBER**).
- Use of organic vapour cartridge respirator is highly unlikely.

#### PRECAUTIONS

- Avoid excessive heat, which can cause formation of vapours.
- Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozones, peroxides.
- Eliminate ignition sources.
- Restrict access and work upwind of spill.

### RESPONSE TO FIRES

#### CONSIDER ACTION ONLY IF SAFETY PERMITS!

- Wear SCBA and eye protection when responding to fires.
- Shut off fuel supply.
- Extinguish fire with CO<sub>2</sub>, dry chemical, alcohol foam or water fog.  
NOTE: Water or foam may cause frothing.
- Use water to cool containers exposed to fire

**HYDRAULIC OIL  
RESPONSE TO SPILLS  
CONSIDER ACTION ONLY IF SAFETY PERMITS!**

**ON LAND**

- Prevent additional discharge of oil.
- Do not flush into ditch/drainage systems.
- Block entry into waterways.
- Contain spill by diking with earth, snow or other barrier.
- Remove minor spills with peat moss and/or sorbent pads.
- Remove large spills with pumps or vacuum equipment. Spill can also be mechanically removed if oil is too viscous to be pumped.

**ON WATER**

- Use booms to contain and concentrate spill.
- Remove spill using sorbent, skimmer or vacuum truck.
- Protection booming can be considered for water intakes/marinas.

**STORAGE & TRANSFER**

- Store closed, labelled containers in cool, ventilated areas away from incompatible materials.

**DISPOSAL**

- Segregate waste types.
- Place contaminated materials into marked containers.
- Consult with environmental authorities during final disposal.

**FIRST AID**

**EYES**

- Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes while holding the eyelids open.
- Remove contact lenses, if exposed to vapours or liquid.
- Get prompt medical attention.

**SKIN**

- Remove and launder contaminated clothing.
- Wash skin thoroughly with soap and water.
- Get medical attention.
- Discard saturated leather articles.

**INHALATION**

- Move victim to fresh air.
- Perform artificial respiration if victim not breathing.
- Provide oxygen if victim is having difficulty breathing.
- Get prompt medical attention.

**INGESTION**

- DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration.
- Get prompt medical attention.

## LUBE OIL

### TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Amber liquid	FLASHPOINT:	190 to 220°C
ODOUR:	Petroleum	POUR POINT:	-35 to -400°C
SOLUBILITY:	Generally insoluble	VISCOSITY:	Medium (255cSt @15°C )
VAPOUR		SPECIFIC	
DENSITY:	Few vapours emitted	GRAVITY:	Floats on water (0.9)

### SAFETY MEASURES

#### WARNINGS

- Vapours are heavier than air but are unlikely to form.
- Toxic gas can form in fire and at high temperatures.
- CO, CO<sub>2</sub>, and dense smoke are produced upon combustion.
- Oil mist or vapour from hot oil can cause irritation of the eyes, nose, throat and lungs.

#### PERSONAL PROTECTION

- Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; nitrile, PVC and Viton are suitable materials. **(DO NOT USE NATURAL RUBBER.)**
- Use of organic vapour cartridge respirator is highly unlikely.

#### PRECAUTIONS

- Avoid excessive heat, which can cause formation of vapours.
- Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozones, peroxides.
- Eliminate ignition sources.
- Restrict access and work upwind of spill.

### RESPONSE TO FIRES

#### CONSIDER ACTION ONLY IF SAFETY PERMITS!

- Wear SCBA and eye protection when responding to lube oil fires.
- Shut off fuel supply.
- Extinguish fire with CO<sub>2</sub>, dry chemical, alcohol foam or water fog.  
NOTE: Water or foam may cause frothing.
- Use water to cool containers exposed to fire.

**LUBE OIL  
RESPONSE TO SPILLS  
CONSIDER ACTION ONLY IF SAFETY PERMITS!**

**ON LAND**

- Prevent additional discharge of oil.
- Do not flush into ditch/drainage systems.
- Block entry into waterways.
- Contain spill by diking with earth, snow or other barrier.
- Remove minor spills with sorbent and/or peat moss.
- Remove large spills with pumps or vacuum equipment. Spill can also be mechanically removed if oil is too viscous to be pumped.

**ON WATER**

- Use booms to contain and concentrate spill.
- Remove spill using sorbent, skimmer or vacuum truck.
- Protection booming can be considered for water intakes.

**STORAGE & TRANSFER**

- Store closed, labelled containers in cool, ventilated areas away from incompatible materials.

**DISPOSAL**

- Segregate waste types.
- Place contaminated materials into marked containers.
- Consult with environmental authorities during final disposal.

**FIRST AID**

**EYES**

- Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes while holding the eyelids open.
- Remove contact lenses, if exposed to vapours or liquid.
- Get prompt medical attention.

**SKIN**

- Remove and launder contaminated clothing.
- Wash skin thoroughly with soap and water.
- Get medical attention.
- Discard saturated leather articles.

**INHALATION**

- Move victim to fresh air.
- Perform artificial respiration if victim not breathing.
- Provide oxygen if victim is having difficulty breathing.
- Get prompt medical attention.

**INGESTION**

- DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration.
- Get prompt medical attention.

## WASTE OIL

### TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Black to brown liquid	FLASHPOINT:	100 to 200°C
ODOUR:	Petroleum	POUR POINT:	-30 to -400°C
SOLUBILITY:	Generally insoluble	VISCOSITY:	Medium (200 - 300 cSt)
VAPOUR		SPECIFIC	
DENSITY:	Few vapours emitted	GRAVITY:	Floats on water (0.9)

### SAFETY MEASURES

#### WARNINGS

- Vapours are heavier than air but are unlikely to form.
- Toxic gas can form in fire and at high temperatures.
- CO, CO<sub>2</sub>, and dense smoke are produced upon combustion.

#### PERSONAL PROTECTION

- Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; nitrile, PVC and Viton are suitable materials (**DO NOT USE NATURAL RUBBER.**)
- Use of organic vapour cartridge respirator is highly unlikely.

#### PRECAUTIONS

- Avoid excessive heat, which can cause formation of vapours.
- Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozones, peroxides.
- Eliminate ignition sources.
- Restrict access and work upwind of spill.

### RESPONSE TO FIRES

#### CONSIDER ACTION ONLY IF SAFETY PERMITS!

- Wear SCBA and eye protection when responding to lube oil fires.
- Shut off fuel supply.
- Extinguish fire with CO<sub>2</sub>, dry chemical, alcohol foam or water fog.  
NOTE: Water or foam may cause frothing.
- Use water to cool containers exposed to fire



**WASTE OIL  
RESPONSE TO SPILLS  
CONSIDER ACTION ONLY IF SAFETY PERMITS!**

**ON LAND**

- Prevent additional discharge of oil.
- Do not flush into ditch/drainage systems.
- Block entry into waterways.
- Contain spill by diking with earth, snow or other barrier.
- Remove minor spills with peat moss and/or sorbent pads.
- Remove large spills with pumps or vacuum equipment. Spill can also be mechanically removed if oil is too viscous to be pumped.

**ON WATER**

- Use booms to contain and concentrate spill.
- Remove spill using sorbent, skimmer or vacuum truck.
- Protection booming can be considered for water intakes.

**STORAGE & TRANSFER**

- Store closed, labelled containers in cool, ventilated areas away from incompatible materials.

**DISPOSAL**

- Segregate waste types.
- Place contaminated materials into marked containers.
- Consult with environmental authorities during final disposal.

**FIRST AID**

**EYES**

- Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes while holding the eyelids open.
- Remove contact lenses, if exposed to vapours or liquid.
- Get prompt medical attention.

**SKIN**

- Remove and launder contaminated clothing.
- Wash skin thoroughly with soap and water.
- Get medical attention.
- Discard saturated leather articles.

**INHALATION**

- Move victim to fresh air.
- Perform artificial respiration if victim not breathing.
- Provide oxygen if victim is having difficulty breathing.
- Get prompt medical attention.

**INGESTION**

- DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration.
- Get prompt medical attention.

## GASOLINE

### TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Colourless liquid (can be dyed)	FLASH POINT:	-50 °C
ODOUR:	Gasoline/Petroleum	FREEZING PT:	-60 °C
SOLUBILITY:	Insoluble	VISCOSITY:	Not viscous (< 1 cSt)
VAPOUR		SPECIFIC	
DENSITY:	Will sink to ground levels	GRAVITY:	Floats on water (0.7 - 0.8)

### SAFETY MEASURES

#### WARNINGS

- **Vapours form instantaneously, and are heavier than air.**
- Empty containers can contain explosive vapours.
- Vapours can travel to distant sources of ignition and flash back.
- Eye contact causes irritation.
- Material can accumulate static charges.
- Inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.

#### PERSONAL PROTECTION

- Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; nitrile, Viton and PVC are suitable materials (**DO NOT USE NATURAL RUBBER or NEOPRENE.**)
- Wear full-face organic vapour cartridge respirator where oxygen is adequate; otherwise wear positive pressure SCBA, if circumstances warrant.

#### PRECAUTIONS

- Monitor for explosive atmosphere.
- Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozones, peroxides.
- Eliminate ignition sources.
- Restrict access and work upwind of spill.

### RESPONSE TO FIRES

#### CONSIDER ACTION ONLY IF SAFETY PERMITS!

- Wear SCBA in confined areas.
- Shut off fuel supply.
- Extinguish fire with CO<sub>2</sub>, dry chemical, alcohol foam or water fog.
- Use water to cool containers exposed to fire.

**GASOLINE  
RESPONSE TO SPILLS  
CONSIDER ACTION ONLY IF SAFETY PERMITS!**

**ON LAND**

- **ELIMINATE IGNITION SOURCES.**
- Do not flush into ditch/drainage systems.
- Block entry into waterways.
- Contain spill by diking with earth, snow or other barrier.
- Remove minor spills with peat moss and/or sorbent pads.
- Cover pools with foam to prevent vapour evolution if gasoline presents a fire hazard; otherwise allow vapours to dissipate.

**ON WATER**

- **ELIMINATE IGNITION SOURCES.**
- **DO NOT ATTEMPT TO CONTAIN OR REMOVE SPILLS.**
- Protection booming can be considered for water intakes.

**STORAGE & TRANSFER**

- Store closed, labelled containers in cool, ventilated areas away from incompatible materials.
- Electrically ground containers & vehicles during transfer.

**DISPOSAL**

- Place contaminated materials into segregated marked containers.
- Consult with environmental authorities during final disposal.

**FIRST AID**

**EYES**

- Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes while holding the eyelids open.
- Remove contact lenses, if exposed to vapours or liquid.
- Get prompt medical attention.

**SKIN**

- Remove and launder contaminated clothing.
- Wash skin thoroughly with soap and water.
- Get medical attention.
- Discard saturated leather articles.

**INHALATION**

- Move victim to fresh air.
- Perform artificial respiration if victim not breathing.
- Provide oxygen if victim is having difficulty breathing.
- Get prompt medical attention.

**INGESTION**

- **DO NOT INDUCE VOMITING;** if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration.
- Get prompt medical attention.

## JET A

### TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	White or pale yellow liquid	FLASH POINT:	-20 to - 250°C
ODOUR:	Gasoline/Petroleum	FREEZING PT:	-50°C
SOLUBILITY:	Negligible	VISCOSITY:	Not viscous (<7 cSt)
VAPOUR		SPECIFIC	
DENSITY:	Will sink to ground levels	GRAVITY:	Floats on water (0.75 0.8)

### SAFETY MEASURES

#### WARNINGS

- Vapours instantaneously form, and are heavier than air.
- Low-lying areas can trap explosive vapours.
- Vapours can travel to distant sources of ignition and flash back.
- Eye contact causes irritation.
- Material can accumulate static charges.
- Inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.

#### PERSONAL PROTECTION

- Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; nitrile and Viton are suitable protective materials (**DO NOT USE NATURAL RUBBER, NEOPRENE, OR PVC**).
- Wear full-face organic vapour cartridge respirator where oxygen is adequate; otherwise wear SCBA, if circumstances warrant.

#### PRECAUTIONS

- Monitor for explosive atmosphere.
- Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, peroxides.
- Eliminate ignition sources.
- Restrict access and work upwind of spill.

### RESPONSE TO FIRES

#### CONSIDER ACTION ONLY IF SAFETY PERMITS!

- Wear SCBA in confined areas.
- Shut off fuel supply.
- Extinguish fire with CO<sub>2</sub>, dry chemical, AFFF foam or water fog.
- Use water to cool containers exposed to fire.

**JET A**  
**RESPONSE TO SPILLS**  
**CONSIDER ACTION ONLY IF SAFETY PERMITS!**

**ON LAND**

- **ELIMINATE IGNITION SOURCES.**
- Block entry into waterways; do not flush into ditch/drain systems.
- Contain spill by diking with earth, snow or other barrier.
- Remove minor spills with sorbent or explosion-proof pump.
- Cover pools with foam to prevent vapour evolution if avgas presents a fire hazard; otherwise allow vapours to dissipate.

**ON WATER**

- **ELIMINATE IGNITION SOURCES.**
- **Contain or remove spills ONLY AFTER VAPOURS DISSIPATE.**
- Protection booms can be considered for water intakes.
- Recover slicks using skimmer and sorbent, if volumes warrant.

**STORAGE & TRANSFER**

- Store closed, labelled containers in cool, ventilated areas away from incompatible materials.
- Electrically ground containers & vehicles during transfer.

**DISPOSAL**

- Place contaminated materials in segregated, marked containers.
- Consult with environmental authorities during final disposal.

**FIRST AID**

**EYES**

- Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes while holding the eyelids open.
- Remove contact lenses, if exposed to vapours or liquid.
- Get prompt medical attention.

**SKIN**

- Remove and launder contaminated clothing.
- Wash skin thoroughly with soap and water.
- Get medical attention.
- Discard saturated leather articles.

**INHALATION**

- Move victim to fresh air.
- Perform artificial respiration if victim not breathing.
- Provide oxygen if victim is having difficulty breathing.
- Get prompt medical attention.

**INGESTION**

- **DO NOT INDUCE VOMITING;** if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration.
- Get prompt medical attention.

**PROPANE**  
**TYPICAL PHYSICAL AND CHEMICAL PROPERTIES**

APPEARANCE:	Colourless gas	FLASH POINT:	-104 °C
ODOUR:	Natural gas odour	FREEZING PT:	-190 °C
SOLUBILITY:	Insoluble	VISCOSITY:	n/a
VAPOUR		SPECIFIC	
DENSITY:	Will sink to ground levels	GRAVITY:	Liquid floats on water

**SAFETY MEASURES**

**WARNINGS**

- Vapours form instantaneously, and are heavier than air.
- Vapours can travel to distant sources of ignition and flash back.
- Eye contact causes irritation.
- Material can accumulate static charges.
- Inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.

**PERSONAL PROTECTION**

- Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; nitrile and Viton are suitable protective materials (**DO NOT USE NATURAL RUBBER, NEOPRENE, OR PVC**).
- Avoid frostbite burn to skin and eyes from contact with propane.
- Wear full-face organic vapour cartridge respirator where oxygen is adequate, otherwise wear positive pressure SCBA.

**PRECAUTIONS**

- Monitor for explosive atmosphere.
- Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozones, peroxides.
- Eliminate ignition sources.
- Restrict access and work upwind of spill.

**RESPONSE TO FIRES**  
**CONSIDER ACTION ONLY IF SAFETY PERMITS!**

- Wear SCBA in confined areas.
- Shut off fuel supply.
- Extinguish fire with CO<sub>2</sub>, dry chemical, alcohol foam or water fog.
- Use water to cool containers exposed to fire.

**PROPANE  
RESPONSE TO GAS RELEASES  
CONSIDER ACTION ONLY IF SAFETY PERMITS!**

**ON LAND**

- **ELIMINATE IGNITION SOURCES.**
- **DO NOT ATTEMPT TO CONTAIN OR REMOVE SPILLS**

**ON WATER**

- **ELIMINATE IGNITION SOURCES.**
- **DO NOT ATTEMPT TO CONTAIN OR REMOVE SPILLS.**

**STORAGE & TRANSFER**

- It is not possible to collect released material.

**DISPOSAL**

- Consult with environmental authorities if the disposal of any contaminated materials is required.

**FIRST AID**

**EYES**

- Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes while holding the eyelids open.
- Remove contact lenses, if exposed to vapours or liquid.
- Get prompt medical attention.

**SKIN**

- Remove and launder contaminated clothing.
- Wash skin thoroughly with soap and water.
- Get medical attention.
- Discard saturated leather articles.

**INHALATION**

- Move victim to fresh air.
- Perform artificial respiration if victim not breathing.
- Provide oxygen if victim is having difficulty breathing.
- Get prompt medical attention.

**INGESTION**

- **DO NOT INDUCE VOMITING;** if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration.
- Get prompt medical attention.