

## Section 1 - PRODUCT AND SUPPLIER IDENTIFICATION

### Product Identification

- **Name of the category:** naphthas and condensates;
- **The name of the product:** Natural Gas Condensate;
- **Trade name of the product:** Rong Doi & Rong Doi Tay Field Condensate;
- **Product use:** Fuel, solvent.

### Supplier Identification

- **Company name:** Korea National Oil Corporation Vietnam Office
- **Address:** 10th Floor, Diamond Plaza,34 Le Duan St., Dis. 1, Ho Chi Minh City, Socialist Rep. of Vietnam
- **Telephone:** (84-28) 3825-7808
- **Fax:** (84-28) 3825-7806
- **Emergency telephone number:** (84-28) 3825-7808

## Section 2 - HAZARDS IDENTIFICATION

### Classification

<b>Physical hazards</b>	Flammable liquids Category 1
<b>Health hazards</b>	Skin corrosion/irritation Category 2
	Aspiration Hazard -- Category 1
	Skin corrosion/irritation -- Category 2
	Acute toxicity, Inhalation -- Category 4
	Specific target organ toxicity (single exposure) -- Category 3
	Carcinogenicity -- Category 1B

### Label elements



**Signal word(s):**           **DANGER**

### Hazard statement(s):

- Extremely flammable liquid and vapor.
- Causes skin irritation.
- May be fatal if swallowed and enters airways.
- May contain poisonous hydrogen sulfide gas
- Harmful if inhaled.
- May cause drowsiness or dizziness.
- May cause cancer.
- Toxic to aquatic life with long lasting effects.

**Precautionary Statement(s):****Prevention:**

Obtain special instructions before use.  
 Do not handle until all safety precautions have been read and understood.  
 Keep away from heat/sparks/open flames/hot surfaces - No smoking.  
 Keep container tightly closed.  
 Keep cool.  
 Ground/bond container and receiving equipment.  
 Use with explosion-proof equipment.  
 Use only non-sparking tools.  
 Take precautionary measures against static discharge.  
 Avoid breathing dust/fume/gas/mist/vapors/spray.  
 Wash thoroughly after handling.  
 Use only outdoors or in a well-ventilated area.  
 Avoid release to the environment.  
 Wear protective gloves / protective clothing / eye protection / face protection.

**Response:**

**IF ON SKIN:** Remove/Take off immediately all contaminated clothing.  
 Wash with plenty of soap and water.  
 If skin irritation occurs: Get medical advice/attention.  
 Take off contaminated clothing and wash before reuse.

**IF INHALED:** Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
 Call a POISON CENTER or doctor/physician if you feel unwell.

**IF SWALLOWED:** Immediately call a POISON CENTER or doctor/physician.  
 Do NOT induce vomiting.

**In case of fire:** Use dry chemical, carbon dioxide, or foam for extinction.  
 Collect spillage.  
 Store in a well-ventilated place. Keep container tightly closed.  
 Dispose of contents/container to approved disposal facility.

**Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS**

Components	CAS number	% Mass
Natural gas condensate (Petroleum)	64741-47-5	100
Benzene	71-43-2	2.3374
Toluene	108-88-3	5.7391
m-Xylene	108-38-3	2.1729
p-Xylene	106-42-3	2.1809
o-Xylene	95-47-6	1.2740
Cyclohexane	110-82-7	2.1220
Ethylbenzene	100-41-4	0.7856
n-Hexane	110-54-3	2.6142

## Section 4 - FIRST AID MEASURES

<b>Inhalation</b>	Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.
<b>Skin contact</b>	Immediately remove contaminated clothing. Wash with soap and water. Continue to rinse for at least 15 minutes. In case of rashes, wounds or other skin disorders: Seek medical attention and bring along these instructions.
<b>Eye contact</b>	Immediately flush with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists.
<b>Ingestion</b>	Immediately rinse mouth and drink plenty of water or milk. Keep person under observation. Do not induce vomiting. If vomiting occurs, keep head low. Seek immediate medical attention or advice.
<b>Most important symptoms/effects, acute and delayed</b>	Headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue Dry skin and possible irritation with repeated or prolonged exposure.
<b>Indication of immediate medical attention and special treatment needed</b>	Treat symptomatically. Be aware that symptoms of chemical pneumonia (shortness of breath) may occur several hours after exposure.

## Section 5 - FIRE FIGHTING MEASURES



### NFPA 704 Hazard Class

**Health: 1**

**Flammability: 4**

**Instability: 0**

(0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

**EXTINGUISHING MEDIA** Foam. Dry chemical powder. BCF (where regulations permit). Carbon dioxide. Water spray or fog - Large fires only.

**FIRE FIGHTING** Alert Emergency Responders and tell them location and nature of hazard. May be violently or explosively reactive. Wear breathing apparatus plus protective gloves for fire only. Prevent, by any means available, spillage from entering drains or water course. If safe, switch off electrical equipment until vapor fire hazard removed. Use water delivered as a fine spray to control fire and cool adjacent area. Avoid spraying water onto liquid pools. Do not approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire. Equipment should be thoroughly decontaminated after use. When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 1640 feet in all directions.

### **GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS**

Liquid and vapor are highly flammable.  
Severe fire hazard when exposed to heat, flame and/or oxidizers.  
Vapor forms an explosive mixture with air.  
Severe explosion hazard, in the form of vapor, when exposed to flame or spark.  
Vapor may travel a considerable distance to source of ignition.  
Heating may cause expansion / decomposition with violent rupture of containers.  
On combustion, may emit toxic fumes of carbon monoxide (CO)

**FIRE INCOMPATIBILITY** Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result

## Section 6 - ACCIDENTAL RELEASE MEASURES

### **Personal precautions, protective equipment and emergency procedures**

Stay upwind. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Avoid inhalation of vapors and spray mist and contact with skin and eyes.

Wear suitable protective clothing, gloves and eye/face protection. For personal protection, see section 8 of the SDS.

### **Methods and materials for containment and cleaning up**

Remove sources of ignition. Beware of the explosion danger. Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.

Small Spills: Absorb spillage with non-combustible, absorbent material. Ensure that waste and contaminated materials are collected and removed from the work area as soon as possible in a suitably labeled container.

Large Spills: Remove with vacuum trucks or pump to storage/salvage vessels. Use a noncombustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Wash area with soap and water.

### **Environmental precautions**

Prevent spreading over a wide area (e.g. by containment or oil barriers). Do not contaminate water. Contact local authorities in case of spillage to drain/aquatic environment.

## Section 7 - HANDLING AND STORAGE

### **Precautions for safe handling**

Provide adequate ventilation. Avoid inhalation of vapors/mist and contact with skin and eyes. The product is extremely flammable, and explosive vapor/air mixtures may be formed even at normal room temperatures. Ground container and transfer equipment to eliminate static electric sparks. Vapors are heavier than air and may travel along the floor and in the bottom of containers. Use non-sparking hand tools and explosion-proof electrical equipment. Wear appropriate personal protective equipment. Immediately change contaminated clothes.

DO NOT EAT, DRINK or SMOKE when using the product. Observe good industrial hygiene practices. Use only bottom loading of tankers, in compliance with European legislation. Do not use compressed air for filling, discharging, or handling operations. Empty containers may contain flammable product residues.

### **Conditions for safe storage, including any incompatibilities**

Store in a well-ventilated place. Follow rules for flammable liquids. Keep away from heat, spark, open flames and other sources of ignition.

Store in a cool, dry place. Store in tightly closed original container. Keep away from food, drink and animal feeding stuffs. Store away from incompatible materials.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Components	CAS number	Occupational Exposure Limits			Units
		OSHA <sup>(1)</sup>	NIOSH <sup>(2)</sup>	VN MOH <sup>(3)</sup>	
Benzene	71-43-2	1 5 <sup>STEL</sup>	0.1 1 <sup>STEL</sup>	1.57 4.7 <sup>STEL</sup>	ppm
Toluene	108-88-3	200 300 <sup>Ceiling</sup>	100 150 <sup>STEL</sup>	27 80 <sup>STEL</sup>	ppm
m-Xylene	108-38-3	100	100 150 <sup>STEL</sup>	23 69 <sup>STEL</sup>	ppm
p-Xylene	106-42-3	100	100 150 <sup>STEL</sup>	23 69 <sup>STEL</sup>	ppm
o-Xylene	95-47-6	100	100 150 <sup>STEL</sup>	23 69 <sup>STEL</sup>	ppm
Cyclohexane	110-82-7	300	300	145 290 <sup>STEL</sup>	ppm
Ethylbenzene	100-41-4	100	100 125 <sup>STEL</sup>		ppm
n-Hexane	110-54-3	500	50	25 50 <sup>STEL</sup>	ppm

<sup>(1)</sup> 8-hour TWA unless otherwise specified.

<sup>(2)</sup> 10-hour TWA unless otherwise specified

<sup>(3)</sup> VN MOH: according to Vietnam Ministry of Health

STEL: 15-minute Short Term Exposure Limit

Ceiling: Concentration not to be exceeded at any time.

### ENGINEERING CONTROLS

Explosion proof or local exhaust ventilation should be used to: (1) Maintain airborne chemical concentrations below applicable exposure limits, (2) Prevent accumulation of flammable vapors and formation of explosive atmospheres, and (3) Prevent formation of oxygen deficient atmospheres, especially in confined spaces.

### EYE PROTECTION

Eye protection that meets or exceeds ANSI Z.87.1 is recommended if there is a potential for liquid contact to the eyes. Safety glasses equipped with side shields or safety goggles are recommended. Chemical goggles should be worn during transfer operations or when there is a likelihood of misting, splashing or spraying of this material. A face shield may be necessary depending on conditions of use.

### HAND PROTECTION

Avoid skin contact. Use impervious gloves. PVC and neoprene may be suitable for incidental contact. Nitrile rubber should be used for longer term protection when prolonged or frequent contact may occur. Gloves should be worn on clean hands and hands should be washed after removing gloves. Also wash hands with plenty of mild soap and water before eating, drinking, smoking, using toilet facilities or leaving work.

### SKIN AND BODY PROTECTION

Avoid skin contact. Wear long-sleeved fire-retardant garments while working with flammable and combustible liquids. Additional chemical-resistant protective gear may be required if splashing or spraying conditions exist.

### RESPIRATORY PROTECTION

A respiratory protection program that meets or exceeds OSHA 29 CFR 1910.134 and ANSI Z.88.2 should be followed whenever workplace conditions warrant the use of a respirator. Use a full-face positive-pressure supplied air respirator in circumstances where air-purifying respirators may not provide adequate protection or where there may be the potential for airborne exposure above the exposure limits. If exposure concentration is unknown, IDLH conditions exist or there is a potential for exposure to hydrogen sulfide above exposure limits, use a NIOSH approved self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid
Color	Yellowish
Odor	Gasoline
Initial boiling point and boiling range	30.9°C to 305.5°C
Flash point	< -20°C
Vapor pressure	10.15PSIG @ 37.8°C
Relative density	0.7610 kg/L @ 15°C
Solubility(ies)	Slightly soluble in water
Viscosity	0.8600 cSt @20°C

## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Stable under normal temperature conditions
<b>Possibility of hazardous Reactions</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Heat, flames and sparks, elevated temperatures. Contact with incompatible materials.
<b>Incompatible materials</b>	Strong acids. Strong oxidizing agents.
<b>Hazardous decomposition Products</b>	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

## Section 11 - TOXICOLOGICAL INFORMATION

Components	Hazard	ACUTE TOXICITY DATA
Benzene	Acute inhalation	IDLH (NIOSH): 500 ppm LC <sub>50</sub> (rat): 10,000 ppm / 7hr
Toluene	Acute inhalation	IDLH (NIOSH): 500ppm LC <sub>50</sub> (rat): 8,000 ppm / 4hr
m-Xylene	Acute inhalation	IDLH (NIOSH): 900 ppm LC <sub>50</sub> (rat) = 5,984 ppm / 6hr
p-Xylene	Acute inhalation	IDLH (NIOSH): 900 ppm LC <sub>50</sub> (rat) = 4,550 ppm / 6hr
o-Xylene	Acute inhalation	IDLH (NIOSH): 900 ppm
Cyclohexane	Acute inhalation	IDLH (NIOSH): 1,300 ppm

Components	Hazard	ACUTE TOXICITY DATA
		LC <sub>Lo</sub> (mice): 70,000 mg/m <sup>3</sup> / 2hr
Ethylbenzene	Acute inhalation	IDLH (NIOSH): 900 ppm LC <sub>Lo</sub> (rat): 4,000 ppm / 4hr
n-Hexane	Acute inhalation	IDLH (NIOSH): 1,100 ppm LC <sub>50</sub> (rat): 77,000 ppm / 1hr

IDLH : Immediately Dangerous to Life or Health Concentrations

**Aspiration Hazard:** The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

**Skin Corrosion/Irritation:** May cause skin irritation with prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are exposed repeatedly.

**Serious Eye Damage/Irritation:** May cause moderate irritation.

**Signs and Symptoms:** Light hydrocarbon gases are simple asphyxiants and can cause anesthetic effects at high concentrations. Symptoms of overexposure, which are reversible if exposure is stopped, can include shortness of breath, drowsiness, headaches, confusion, decreased coordination, visual disturbances and vomiting. Continued exposure can lead to hypoxia (inadequate oxygen), rapid breathing, cyanosis (bluish discoloration of the skin), numbness of the extremities, unconsciousness and death.

**Skin Sensitization:** Skin contact is not anticipated.

**Respiratory Sensitization:** Excessive exposure may cause irritation to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

**Specific Target Organ Toxicity (Single Exposure):** Not expected to cause organ effects from single exposure.

**Specific Target Organ Toxicity (Repeated Exposure):** Causes damage to organs (liver, kidneys, blood, nervous system and skin) through prolonged or repeated exposure.

**Carcinogenicity:** May cause cancer. Exposure to light hydrocarbons in the same boiling range as this product have been associated in animal studies with effects to the central nervous system, peripheral nervous system, liver, and kidneys. The significance of these animal models to predict similar human response is uncertain. Observing good work practices and personal hygiene procedures (Sections 7 and 8) can minimize potential risks to humans.

This material contains benzene. Human health studies indicate that prolonged and/or repeated overexposure to benzene may cause damage to the blood-forming system (particularly bone marrow), and serious blood disorders such as aplastic anemia and leukemia.

**Generative Cell Mutagenicity:** Some crude oil fractions have been positive in mutagenicity studies.

**Reproductive Toxicity:** Not expected to cause reproductive toxicity.

#### Carcinogenicity:

Component (CAS No.)	ACGIH <sup>(1)</sup>	IARC Monographs <sup>(2)</sup>	US NTP	OSHA Regulated
Benzene (71-43-2)	A1	1	Yes	Yes
Ethyl benzene (100-41-4)	A3	2B	No	No
Toluene (108-88-3)	A4	3	No	No
Xylenes	A4	3	No	No

<sup>(1)</sup> ACGIH Carcinogens: A1 = Confirmed human carcinogen, A2 = Suspected human carcinogen, A3 = Confirmed animal carcinogen with unknown relevance to humans, A4 = Not classifiable as a human carcinogen, A5 = Not suspected as a human carcinogen

<sup>(2)</sup> IARC Monographs: 1 = Carcinogenic to humans, 2A = Probably carcinogenic to humans, 2B = Possibly carcinogenic to humans, 3 = Not classifiable as to carcinogenicity to humans, 4 = Probably not carcinogenic to humans

## Section 12 – ECOLOGICAL INFORMATION

Keep out of sewers, drainage areas, and waterways. Report spills and releases, as applicable, under local governmental regulations. May be hazardous to waterways/wildlife.

If released into soil, this product will absorb and may biodegrade in anaerobic conditions. In water it may volatilize.

## Section 13 - DISPOSAL CONSIDERATIONS

<b>Disposal instructions:</b>	Product is suitable for burning in an enclosed, controlled burner for fuel value or disposal by supervised incineration.
<b>Local disposal regulations</b>	Dispose of in accordance with local regulations for hazardous waste.
<b>Waste from residues/ unused products</b>	Dispose of in accordance with local regulations for hazardous waste
<b>Contaminated packaging</b>	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## Section 14 - TRANSPORTATION INFORMATION

### IATA

<b>UN number</b>	UN3295
<b>UN proper shipping name</b>	Hydrocarbons, liquid, n.o.s. (Natural gas condensates)
<b>Transport hazard class</b>	3
<b>Packaging group</b>	I
<b>Labels required</b>	3
<b>ERG Code</b>	3H
<b>Special precautions for user</b>	Not available.

### IMDG

<b>UN number</b>	UN3295
<b>UN proper shipping name</b>	Hydrocarbons, liquid, n.o.s. (Natural gas condensates)
<b>Transport hazard class</b>	3
<b>Packaging group</b>	I
<b>Labels required</b>	3
<b>EmS</b>	F-E, S-D
<b>Special precautions for user</b>	Not available.

## Section 15 - REGULATORY INFORMATION

Decision No.3733/2002/QD-BYT of Ministry of Health: Promulgating 21 labor hygiene standards, 05 principles and 07 labor hygiene measurements: Provides Occupational Exposure Limits

Decree No: 38/2015/ND-CP of Prime Minister: Management of waste

## Section 16 - OTHER INFORMATION

Date of Issue : 25-September-2012  
Date of Revision : 16-August-2018  
Rev. : 03

### References

ACGIH: Association Advancing Occupational and Environmental Health  
NIOSH: The National Institute for Occupational Safety and Health  
US. IARC Monographs on Occupational Exposures to Chemical Agents  
Haz-Map® - occupational health database

**Disclaimer:** The information contained herein is accurate to the best of our knowledge. KNOC makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances.