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QUALITY MANAGEMENT SYSTEM

TPS-609
CRUDE OIL DEMULSIFIER

MATERIAL SAFETY DATA SHEET

Issue date: 03/2009

1. PRODUCT AND MANUFACTURER IDENTIFICATION

Trade Name: <u>TPS-609</u>
Product Family: Demulsifier

Product Description: Synergistic blend of polymeric surfactants in a solvent system Application: Demulsifier for dehydrating crude oil / water emulsions

Manufacturer / Supplier: THUAN PHONG Co., Ltd.

Add: 159 Binh Gia St, Ward 8, Vung Tau City, S.R. Viet Nam

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2. COMPOSITION INFORMATION

Component	<u>Content</u> (% by weight)	Hazardous Classification
Organic ethoxylates	5 - 20%	
Mesitylene	< 1%	
Napthalene	< 1%	
Alkylbenzenes	1 - 5%	
2-Ethylhexanol	1 - 5%	
Methanol	60 - 70%	
Xylene	< 2%	
Other proprietary blend	5 - 10%	

3. HAZARDS IDENTIFICATION

Highly flammable.

Toxic by inhalation, in contact with skin and if swallowed.

Harmful: may cause lung damage if swallowed. Vapours may cause drowsiness and dizziness. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4. FIRST-AID MEASURES

EYE CONTACT

Promptly wash opened eye for several minutes under running water. Get medical attention promptly if symptoms occur after washing.

SKIN CONTACT

Wash immediately with water and soap. Get medical attention promptly if symptoms occur after washing.

INHALATION

Remove victim immediately from source of exposure. Supply fresh air. Get medical attention.

INGESTION

DO NOT INDUCE VOMITING! Rinse mouth thoroughly. Drink plenty of water. Get medical attention immediately!

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Fire can be extinguished using: Water spray, CO₂, foam, extinguishing powder, sand etc. SPECIAL FIRE FIGHTING PROCEDURES

Use supplied air respirator if product is involved in a fire. Cool containers exposed to flames with water until well after the fire is out.

HAZARDOUS COMBUSTION PRODUCTS

Carbon monoxide (CO), Carbon dioxide (CO₂)

PROTECTIVE MEASURES IN FIRE

Full protective equipment including suitable respiratory protection.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Wear suitable protective clothing to prevent skin contact.

PRECAUTIONS TO PROTECT ENVIRONMENT

Take appropriate steps to prevent discharges to drains, water courses or onto the ground. Contain spillages with sand or any suitable adsorbent material.

SPILL CLEAN UP METHODS

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate, Absorb in suitable adsorbent material (vermiculite or dry sand), collect spillage in containers and deliver for disposal according to local regulations.

Flush with plenty of water to clean spillage area. Do not let washing down water contaminate ponds or waterways.

7. HANDLING AND STORAGE

STORAGE PRECAUTIONS

Bulk deliveries should be stored in carbon steel tanks. The drums should be stored with their seals intact in ventilated conditions that avoid extremes of temperatures.

Storage class: Flammable and toxic liquid.

USAGE PRECAUTIONS

Avoid spilling, skin and eye contact. Keep away from heat, sparks and open flame. Ventilate well, avoid breathing vapors. Use approved respirator if air contamination is above accepted level. Shelf life: Use within 18 months

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

PROCESS CONDITIONS

Use engineering controls to reduce air contamination to permissible exposure level (explosion-proof general and local exhaust ventilation).

HAND PROTECTION

Use protective gloves made of: rubber, neoprene, nitrile, polyethylene or PVC.

EYE/FACE PROTECTION

Wear approved chemical safety goggles where eye exposure is reasonably probable.

SKIN PROTECTION

Wear protective clothing chemically resistant to this material to prevent any possibility of skin contact RESPIRATORY PROTECTION

Respiratory protection must be used if air concentration exceeds acceptable level. Use chemical respirator with appropriate organic vapor cartridge.

OTHER PROTECTION

Wear appropriate clothing to prevent repeated or prolonged skin contact.

Wash promptly with soap & water if skin becomes contaminated. Promptly remove any clothing that becomes contaminated. No eating or drinking while working with this material. DO NOT SMOKE IN WORK AREA.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state Liquid Color

Clear Yellow

Flash point > 50°C (ASTM D92) Pour point < -25°C (ASTM D97)

Molecular weight Mixture Autoignition temperature N/A Boiling point (760 mmHg) N/A 0.91 - 0.97Specific gravity (H₂O=1)

Solubility in water Not miscible or difficult to mix Solubility in organic solvents Soluble in many organic solvents

pH (diluted solution 5%) 4.0 - 5.0 Kinetic viscosity at 25°C $40 - 90 \text{ mm}^2/\text{s}$

10. STABILITY AND REACTIVITY

STABILITY

Normally stable at typical use temperatures

No particular stability concerns.

CONDITIONS TO AVOID

Avoid heat, flames and other sources of ignition. Avoid contact with strong oxidizers.

HAZARDOUS DECOMPOSITION PRODUCTS

Carbon monoxide (CO), Carbon dioxide (CO₂)

11. TOXICOLOGICAL INFORMATION

INGESTION

Toxic: may cause lung damage, headache nausea and vomiting, dizziness and intoxication if swallowed. Swallowing concentrated chemical may cause severe internal injury.

INHALATION

Toxic by inhalation: danger of very serious irreversible effects through inhalation, may cause drowsiness, diszriness, disorientation. Vapour may affect central nervous SKIN CONTACT

Liquid may irritate skin in contact with skin. Toxic through skin absorption. Prolonged contact may cause redness, cracking of skin.

EYE CONTACT

Vapor in the eyes may cause redness irritation and smarting

12. ECOLOGICAL INFORMATION

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

13. DISPOSAL CONSIDERATIONS

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. ALL DISPOSAL PRACTICES MUST BE IN COMPLIANCE WITH ALL LOCAL LAWS AND REGULATIONS. THE MANUFACTURE HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL.

14. TRANSPORT INFORMATION

The substance is not regarded as a dangerous material for ship and air transportation.

15. REGULATORY INFORMATION

Not applicable

16. OTHER/ADDITIONAL INFORMATIONS

THE INFORMATION HEREIN IS MADE BASED ON REFERENCES, INFORMATION AND DATA AVAILABLE AT PRESENT. IT MAY BE REVISED NEW INFORMATION IS AVAILABLE. THE DESCRIPTIONS HEREIN ARE FOR NORMAL HANDLING. FOR SPECIAL APPLICATIONS, MAKE SAFETY PROVISIONS SUITABLE TO THEM PRIOR TO USE.