



LONRON PETROLEUM TECHNOLOGY COMPANY

HARNESS TURBULENCE

This document will be subject to revision accordingly upon any changes in chemical formulation.

Previous Revision Date: 2024.05.08

MATERIAL SAFETY DATA SHEET



FLEXIN-W

DRAG REDUCING AGENT FOR WATER (DRA)

1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Product Name:	Drag Reducing Agent For Water (DRA)
Product Code:	FLEXIN-W
Revised:	2024.05.08
Application:	Pressure reduction and flow increase for water pipelines
Manufacturer:	LONRON PETROLEUM TECHNOLOGY COMPANY No. 8A Zijing Rd., Yongqing Industrial Park, Langfang, Hebei, China
Emergency Tel.:	+86-137-2265-3000 +86-316-569-1307/8

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS	%
Starch-modified cationic polymer	None	45-55
Water		35-45
Petroleum Hydrocarbons	64742-47-8	10-20

3. HAZARDS IDENTIFICATION

Physical and chemical hazards / Fire and explosion hazards:

Material can not be burnt.

OSHA Regulatory Status

This material is not classified as hazardous as defined under OSHA regulations. Inflammable liquid. See below for health hazards.

HMIS Rating

Health: 1 (Slight); Flammability: 0 (Least); Reactivity: 0 (Least)

POTENTIAL HEALTH EFFECTS

Primary Routes of Entry: Eye, skin, inhalation (breathing), ingestion (swallowing)

Eye: Contact may cause mild eye irritation including stinging, watering, and redness.

Skin: Mild to moderate skin irritant. Contact may cause redness, itching, burning, and skin damage. Prolonged or repeated contact may cause drying and cracking of the skin, dermatitis (inflammation), burns, and severe skin damage. No information available on skin absorption.

Inhalation (breathing): No information available on acute toxicity. See signs and symptoms.

Ingestion (swallowing): No information available on acute toxicity.

4. FIRST AID MEASURES

Inhalation

Move to fresh air promptly if inhalation of vapor accidentally. Keep the breath smooth. If symptoms persist, call first-aid immediately.

Skin Contact

Flush with large amounts of water, use soap if available. Remove the contaminated cloths and wash before re-use. Wash off quickly with flowing water.

Eye Contact

Flush away with flowing water or physiological saline.

Ingestion

Immediately drink plenty of water, induce vomiting and ask for suggestion from physician.

5. FIRE FIGHTING MEASURES

Flammable Properties

Flash Point (CC): > 80°C

OSHA Flammability Class: Not regulated

LEL/UEL %: No data

Auto-ignition Temperature: No data

NFPA Rating: Health 1 (Slight); Flammability 0 (Least); Reactivity 0 (Least)

Extinguishing Media

Water Spray, Foam, Dry Chemical, CO₂.

Fire Fighting Instructions

Use water spray to cool fire expose surfaces and to protect personnel.

Specific methods of fire-fighting and special equipment for the protection of firefighters

First, cool the container with water spray. If possible, move the container to open place. Wear anti-fire clothes and respirator.

6. ACCIDENTAL RELEASE MEASURES

Land spill

Spills will produce extremely slippery surfaces. This material may burn, but will not ignite readily. Keep all sources of ignition away from spill/release. Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant .

Water spill

Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Spilled material may be absorbed into an appropriate absorbent material.

7. HANDLING AND STORAGE

Handling (Personnel)

Do not wear contaminated clothing or shoes. Use good personal hygiene practices.

Storage

Keep containers tightly sealed in a cool, well-ventilated place away from incompatible materials.

Period of validity

2 years.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering measures to reduce exposure

Ensure the whole process of production tightly sealed, keep good ventilation.

Personal Protective Equipment

RESPIRATORY PROTECTION

Suitable respiratory equipment: respirator with combination filter for vapor/particulate, when the concentration of the products in the air exceed certain level.

HAND PROTECTION

Using PVC or other plastic material gloves.

EYE/FACE PROTECTION

Wear splash resistant goggles and a face shield.

SKIN AND BODY PROTECTION

Poisonous-osmotic-proof protective clothing, hard hat with brim, heavy duty work shoes.

HYGIENE MEASURES

When using do not eat or drink. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the workplace. Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Emulsion containing water soluble polymer
Form/Color	Milky white
Odor	Slightly aliphatic
pH	Not available
Flash Point (CC), °C	>80.0
Freezing Point, °C	<-10.0
Boiling Point (100kPa), °C	100
Density (@20°C), g/ml	0.980-1.050
Viscosity (@20°C, 100s⁻¹), mPa·s	<1500.0
Water Solubility (@20°C)	Miscible
Fat Solubility	Immiscible with most organic solvents

10. STABILITY AND REACTIVITY

Stability

Stable at normal conditions.

Condition to Avoid Instability

Avoid all possible sources of ignition.

Materials and Condition to Avoid

Avoid contact with strong oxidizing agents.

Hazardous Decomposition Products

Combustion can yield carbon dioxide, carbon monoxide and nitrogen oxides.

Hazardous Polymerization

Will not occur.

11. TOXICOLOGICAL INFORMATION**Animal Data**

The effects in animals from single high exposures to vapors or liquid include respiratory tract and eye irritation; exposure to the undiluted liquid may result in corneal opacity. Repeated exposures caused respiratory irritation, nervous system depression, and reversible hematological effects.

12. ECOLOGICAL INFORMATION

Fish:	LC50/Danio rerio/96-hr >100 mg/L (OECD 203) (Based on the toxicity of the components using the Conventional Method.
Daphnids:	EC50/Daphnia magna/48-hr >100 mg/L (OECD 202) (Based on the toxicity of the components using the Conventional Method.
Algae:	IC50/Secendesmus subspicatus/72-ha >100 mg/L (OECD 201) (Based on the toxicity of the components using the Conventional Method.
Hydrolysis:	Does not hydrolyse.
Biodegradation:	Not readily biodegradable.

13. DISPOSAL CONSIDERATIONS**Waste from Residues**

If recycling is not practicable, dispose of in compliance with local regulations

Contaminated Packaging

Can be offered for recycling, re-conditioning or puncture. Empty containers should be taken to local recyclers for disposal. Must be reconditioned or disposed as special waste.

14. TRANSPORTATION INFORMATION

DOT Classification

Not a DOT controlled material (United States).

Identification

Not available.

Special Provisions for Transport

Not applicable.

15. REGULATORY INFORMATION

WHMIS (Canada)

Not controlled under WHMIS.

DSCL (EEC)

This product is not classified according to the EU regulations.

HMIS

Health Hazard: 1

Fire Hazard: 0

Reactivity: 0

National fire protection association (USA)

Health: 1

Flammability: 0

Reactivity: 0

16. OTHER INFORMATION

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.