



MATERIAL SAFETY DATA SHEET

FLEXIN-V

DRAG REDUCING AGENT (DRA)

1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Product Name:	Drag Reducing Agent (Vegetable Oil Based)
Product Code:	FLEXIN-V
Revised:	22-Sept-2016
Application:	Pressure reduction and flow increase for crude oil pipelines
Manufacturer:	Lonron Petroleum Technology Company No. 8AZijing 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	% _{wt}
Sunflower Seed Oil	8001-21-6	63 ~ 68
Polyalphaolefin	68037-01-4	25~28
Calcium Carbonate	471-34-1	6~7

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance / Odor

Yellow slurry / slight vegetable oil odor.

Potential Health Effects

Slightly hazardous in case of skin contact, of eye contact, of inhalation.

Non-hazardous in case of ingestion.

Potential Chronic Health Effects

Carcinogenic Effects: not available.

Mutagenic Effects: not available.

Teratogenic Effects: not available.

Developmental Toxicity: not available.

Repeated or prolonged exposure is not known to aggravate medical condition.

4. FIRST AID MEASURES

Inhalation

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Skin Contact

In case of contact, immediately wash skin with soap and water. Wash contaminated clothing before reuse.

Eye Contact

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

Ingestion

Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

5. FIRE FIGHTING MEASURES

Flammable Properties

Flash Point (CC): > 62°C

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

Extinguishing Media

Water Spray, Foam, Dry Chemical, CO₂.

Fire Fighting Instructions

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 provide protection for personnel attempting to stop a leak.

Water spray may be used to flush spills away from sources of potential ignition.

Products of combustion may contain carbon monoxide, carbon dioxide, and other toxic materials. Do not enter enclosed or confined space without proper protective equipment including respiratory protection.

6. ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Initial Containment

Dike spill. Prevent material from entering sewers, waterways, or low areas.

Prevent material from coming in contact with hydrocarbons as this will form a hard-to-handle gel material.

Spill Clean Up

Recover free liquid for reuse or reclamation. Soak up with sawdust, sand, oil dry or other absorbent material.

7. HANDLING AND STORAGE

Handling (Personnel)

Avoid breathing vapors or spray. Do not get in eyes. Do not get on skin. Wash thoroughly after handling. Wash contaminated clothing prior to reuse.

Storage

Avoid insulating. Sealed keep in cool and ventilated areas.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

VENTILATION

General ventilation is adequate.

Personal Protective Equipment

PROTECTIVE GLOVES

Should be worn when any potential exists for skin contact. NBR or neoprene recommended.

EYE/FACE PROTECTION

Safety glasses with side shields. Wear coverall chemical splash goggles and face shield when possibility exists for eye and face contact due to splashing or spraying materials.

OTHER PROTECTIVE MEASURES

Sufficient protective clothing to minimize skin exposure.

Impervious protective clothing such as apron or chemical suit should be worn if splashing is possible. Launder contaminated clothing before reuse.

Exposure Limits

Not available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Particle suspended system
Flash Point, °C (CC)	>62°C
PH	Not Available
Odor	Slight Fragrance of Vegetable Oil
Form	Slurry
Color	Yellowish
Specific Gravity@ 20°C	0.870-0.920
Viscosity (@ 25°C, 50s ⁻¹), mPa·s	<1000

10. STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions.

Incompatibility with Other Materials

Prevent material from coming in contact with hydrocarbons as this will form a hard-to-handle gel material.

Decomposition

Normal combustion forms carbon dioxide; incomplete combustion may produce carbon monoxide.

Product can lose consistency with heat.

Polymerization

Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Routes of Entry

Absorbed through skin. Eye contact.

Toxicity to Animals

LD50: Not available **LC50:** Not available

Chronic Effects on Humans: Not available

12. ECOLOGICAL INFORMATION

Ecotoxicological Information

Not available

BOD5 and COD

Not available

Products of Biodegradation

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

13. DISPOSAL CONSIDERATIONS**Waste Disposal**

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Do not flush to surface water or sanitary sewer system.

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: 1

Reactivity: 0

National fire protection association (USA)

Health: 1

Flammability: 1

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.