Material Safety Data Sheet

HEDP 60% (RXSOL-81-8160-250)

1. Product and Company Identifaction

Product Name	HEDP 60%
Product Type	RXSOL-81-8160-250

Company Details:
RX MARINE INTERNATIONAL
105, A wing , BSEL , TECH PARK.
VASHI ,NEW BOMBAY 400703 INDIA

Stock Point : Mumbai, Kandla, Kolkata, Chennai, Visakhapatnam, Fujairah

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2. Composition / informationon ingredients

Chemical	%	TWAEV / TLV ppm / mg/m3	LD50 ORAL	(mg/kg) SKIN	LC50 ppm INHALATION
HEDP	58-62%	Not listed	2400	>7940	not known

3. Hazards Identification

Canada – WHMIS Key:	D 2B, E B 2 – Flash Point 38oC, B 3 – Flash Point >38oC &93oC D 1 – Immediately Toxic, D 2 – Chronic Toxicity C – Oxidising Substance, E - Corrosive
U.S.A. – HMIS Key:	Health – 2, Fire – 0, Reactivity – 1 0=minimal, 1=slight, 2=moderate, 3=serious, 4=severe

3. (b) HAZARDS – TOXICITY:

Effects, Acute Exposure:

Skin Contact	Irritating, may be corrosive if not removed promptly
Skin Absorption	Slight; no toxic effects likely by this route
Eye Contact	Irritating, may be corrosive if not removed promptly
Inhalation	Product mist is irritating; prolonged exposure may be corrosive to respiratory tract
Ingestion	Irritating to mouth, throat & stomach – not a route of industrial exposure

Effects, Chronic Exposure:

General	Chronic ingestion of HEDP binds to bone, reducing mineralization of bone in adult beagles & in young rats giving rise to less calcium (& presumably strength) in bone
Sensitising	Not a sensitiser in humans or animals
Carcinogen/Tumorigen	Not considered a tumorigen or a carcinogen in humans or animals
Reproductive Effect	Reduced fertility in rats on prolonged ingestion; no known effect in humans
Mutagen	No known effect on humans or animals; some mutagenic effect observed in onion & barley root tips – significance of this to human health is not known
Synergistic With	Not known
LD50 (oral)	2400, 3130 & 3550mg/kg (rat)

LD50 (skin)	>7940mg/kg (rabbit), >10,000mg/kg (rabbit)
LC50 (inhalation)	Not known

4. First Aid Measures

SKIN:	Wash with plenty of water. Remove contaminated clothing and do not reuse until thoroughly laundered.
EYES:	Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if there is irritation.
INHALATION:	Remove from contaminated area promptly. CAUTION: Rescuer must not endanger himself! If breathing stops, administer artificial respiration and seek medical aid promptly.
INGESTION:	Give plenty of water to dilute product, or milk if available to neutralise it. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

Inadvertent inhalation of vomited material may seriously damage the lungs. The danger of this is greater than the risk of poisoning through absorption of this relatively low-toxicity substance. The stomach should only be emptied under medical supervision, and after the installation of an airway to protect the lungs.

5. Fire-fighting Measures

Flash Point	Not known – will not flash
Autoignition Temperature	Not known – will not burn
Flammable Limits	Not known – will not burn
Combustion Products	Nitrogen oxides, phosphorous oxides
Firefighting Precautions	As for materials sustaining fire; firefighters must wear SCBA
Static Charge Accumulation	Cannot accumulate a static charge on agitation or pumping

6. Accidental Release Measures

Leak Precaution dyke to control spillage and prevent environmental contamination Handling Spill ventilate contaminated area; recover free liquid with suitable corrosion resistant pumps; absorb residue on an inert sorbent, sweep, shovel, & store in closed containers for recycling or disposal

7. Handling and Storage

above 0oC / 32oF. Do not use steel containers. Suitable containers include polyethylene, polypropylene, fibreglass, glass-lined steel and polyvinyl chloride. Do not use copper or brass plumbing or valves. Ensure that containers, whether empty or full, or part full, are tightly sealed unless in use. Avoid creating or breathing product mist. Use with adequate exhaust ventilation if a mist is created. Never cut, drill, weld or grind on or near this container. Avoid all contact with skin and wash work clothes frequently. An eye bath and safety shower must be available near the workplace.

8. Exposure controls and personal protection

ACGIH TLV	Not listed
OSHA PEL	Not listed
STEL	Not listed
Ventilation	No special mechanical ventilation required
Hands	Nitrile gloves recommended – other types may also protect; consult supplier to confirm suitability
Eyes	Safety glasses with side shields; a face shield is also recommended – always protect the eyes
Clothing	Wear impermeable (above) apron, boots, & long sleeves if there is any danger of splashing,

9. Physical and chemical properties

Odour & Appearance	Clear, colourless or yellowish liquid with slight odour
Odour Threshold	Not known
Vapour Pressure	17.5mmHg / 2.3kPa (20oC / 68oF) – only water vapour present
Evaporation Rate (Butyl Acetate = 1)	As for water
Vapour Density (air = 1)	0.6 – only water vapour present
Boiling Range	108oC / 226oF
Freezing Point	0oC / 32oF
Specific Gravity	1.44 (20/20oC)
Water Solubility	Complete
Also soluble in	Methanol, ethylene glycol – probably other polar solvents
Viscosity	Not known
pH	2
Molecular Weight	206grams per mole

10. Stability and reactivity

Dangerously Reactive With	Strong oxidising agents, strong reducing agents, strong alkalis, amines
Also Reactive With	Corrodes some base metals; releases toxic gases in contact with metal sulphides & sulphites
Stability	Stable; will not polymerize
Decomposes in Presence of	Not known
Decomposition Products	None apart from Hazardous Combustion Products
Sensitive to Mechanical Impact	No

11. Toxicological information

Canada DSL	On inventory
U.S.A. TSCA	On inventory
Europe EINECS	On inventory
China IECS	On inventory
Europe Risk Phrases	R: 22, 36, 38 – harmful if swallowed, irritating to eyes, irritating to skin
Europe Safety Phrases	S: 13, 24-26, 36, 46 – keep away from food, drink and animal feed, avoid contact with skin, avoid contact with eyes, in case of contact with eyes, rinse immediately & seek medical advice, wear suitable protective clothing, if swallowed, seek medical advice immediately

12. Ecological information

Bioaccumulation	This product is not a bioaccumulator
Biodegradation	HEDP degrades in the presence of oxygen at a wide range of rates – 0% - 48% in 28 days (a dozen test reports) In Europe, considered to be “readily biodegradeable”
Abiotic Degradation	12-17% in 11 days degradation by direct photolysis
Mobility in soil, water	This product is water soluble and will move readily in soil and water

Aquatic Toxicity:

LC50 (Fish, 96hr)	2180mg/litre (Pimephelas promelas & Cyprinodon variegatus), 200-368mg/litre (Salmo gairdneri),695mg/litre (Ictalurus punctatus), 868mg/litre (Lepomis macrochirus), 207 & 350mg/l (Leuciscus idus)
EC50 (Crustacea, 24hr)	527mg/litre (Daphnia magna), 1770mg/litre (Palaemonetes pugio)
EC50 (Algae)	39mg/litre (Selenastrum capricornutum)

13. Disposal considerations

Waste Disposal	Do not flush to sewer, recycle if possible, biodegradation in approved facility with bacterial sludge of “proven effectiveness” (see Part 12, below) for HEDP is preferred
Containers	Drums should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use. Pails must be vented and thoroughly dried prior to crushing and recycling. IBCs (intermediate bulk containers): polyethylene bottle must be pressure tested & recertified at 30 months. Replace at 60 months (5yrs). Steel containers must be inspected, pressure tested & recertified every 5 years. Never cut, drill, weld or grind on or near this container, even if empty

14. Transport information

Canada TDG AND U.S.A. 49 CFR	PIN	UN-3265
	Shipping Name	corrosive liquid, acidic, N.O.S. (1hydroxyethanediphosphonic acid)
	Class	8
	Packing Group	III

Marine Pollutant not a marine pollutant

15. Regulatory information

No informtion Available

16. Other information

The data given here is based on current knowledge and experience. This Safety Data Sheet describes the product in terms of safety requirements and does not signify any warranty with regard to the product's properties The data given here only applies when product used for proper application(s). The product is not sold as suitable for other applications usage in such may cause risks not mentioned in this sheet. Do not use for other application(s) without seeking advice from manufacturer.