

SAFETY DATA SHEET

According to EC 1907/2006

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier	
Trade name or designation of the mixture	RP™ II Flow Improver
Registration number	-
Synonyms	None.
Issue date	12-May-2017
Version number	13
Revision date	19-April-2024
Supersedes date	19-April-2024
1.2. Relevant identified uses o	f the substance or mixture and uses advised against
Identified uses	Flow Improver.
Uses advised against	Other uses are not recommended unless an assessment is completed, prior to commencement of that use, which demonstrates that the use will be controlled.
1.3. Details of the supplier of t	he safety data sheet
Only Representative of a non-Community Manufacturer	Penman Consulting Limited
Address	Aspect House,
	Wayland Avenue
	Grove Business Park
	Wantage, Oxon
	OX12 9FF
	United Kingdom
Telephone	+44(0) 1367 718 474
E-mail	pcltd02@penmanconsulting.com
Manufacturer	LiquidPower Specialty Products Inc.
Address	2103 CityWest Blvd.
	Suite 1400
	Houston, TX 77042
Telephone	1.713.339.8703 or 1.800.897.2774
E-mail	SDS@LiquidPower.com
Website	www.LiquidPower.com
1.4. Emergency telephone number	+1 703.527.3887 (USA)
	+1 800.424.9300 (USA)
CHEMTREC UK	+44 870 820 0418
	+44 203 807 3798
SECTION 2: Hazards ide	ntification
2.1. Classification of the subst	tance or mixture
The mixture has been asses applies.	ssed and/or tested for its physical, health and environmental hazards and the following classification
Classification according to Re	gulation (FC) No 1272/2008 as amended

Classification according to Regulation (EC) No 1272/2008 as amended

Serious eye damage/eye irritation	Category 2	H319 - Causes serious eye irritation.
Environmental hazards Hazardous to the aquatic environment, long-term aquatic hazard	Category 3	H412 - Harmful to aquatic life with long lasting effects.
2.2. Label elements		

Label according to Regulation ((EC) No. 1272/2008 as amended
Hazard pictograms	
Signal word	Warning
Hazard statements	
H319 H412	Causes serious eye irritation. Harmful to aquatic life with long lasting effects.
Precautionary statements	
Prevention	
P264 P273 P280	Wash thoroughly after handling. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
Response	
P305 + P351 + P338 P337 + P313	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Storage	Not assigned.
Disposal	5
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
Supplemental information on the label	None known.
2.3. Other hazards	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Alcohols, C7-9-iso-, C8-rich	35 - 45	68526-83-0 271-231-4	01-2119449923-30-0002	-	
Classif	cation: Skin Irrit. 2	;H315, Eye Irrit. 2;H3	19, Aquatic Chronic 3;H412		
Propane -1,2 -diol	15 - 20	57-55-6 200-338-0	01-2119456809-23-0028	-	#
Classif	cation: -				
Octan-1-ol	2 - 10	111-87-5 203-917-6	01-2119486978-10-0012	-	
Classif	cation: Eye Irrit. 2	;H319			
Composition comments	All concentrations are in percent by weight. Components not listed are either non-hazardous or are below reportable limits. The full text for all H-statements is displayed in section 16.				
SECTION 4: First aid meas	ures				
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.				
4.1. Description of first aid meas	ures				
Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.				
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.				
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.				
Ingestion	Rinse mouth. Get medical attention if symptoms occur.				
4.2. Most important symptoms and effects, both acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.				
4.3. Indication of any immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.			r observation.	

CTION 5. Eirofighting mossures

SECTION 5: Firefighting m	easures
General fire hazards	No unusual fire or explosion hazards noted.
5.1. Extinguishing media	
Suitable extinguishing media	Water fog. Carbon dioxide (CO2). Alcohol resistant foam. Powder.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
5.2. Special hazards arising from the substance or mixture	During fire, gases hazardous to health may be formed.
5.3. Advice for firefighters	
Special protective equipment for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Special fire fighting procedures	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
SECTION 6: Accidental rel	ease measures
6.1. Personal precautions, protect	ctive equipment and emergency procedures
For non-emergency personnel	Wear appropriate personal protective equipment.
For emergency responders	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up.
6.2. Environmental precautions	Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so.
6.3. Methods and material for containment and cleaning up	Use water spray to reduce vapours or divert vapour cloud drift. Prevent product from entering drains.
	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.
	Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
	Never return spills to original containers for re-use.

6.4. Reference to other For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS. sections

SECTION 7: Handling and storage

7.1. Precautions for safe handling	Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment.
7.2. Conditions for safe storage, including any incompatibilities	Keep containers tightly closed in a dry, cool and well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).
7.3. Specific end use(s)	Flow Improver.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Components	Туре	Value	Form
Propane -1,2 -diol (CAS 57-55-6)	TWA	474 mg/m3	Total vapour and particulates.
		10 mg/m3	Particulate.
		150 ppm	Total vapour and particulates.
logical limit values	No biological exposure limits noted for the ingredient(s).		
commended monitoring	Follow standard monitoring procedures.		

R procedures

Derived no effect levels (DNELs)

General population				
Components		Value	Assessment factor	Notes
Alcohols, C7-9-iso-, C8-rich (C	AS 68526-83-0)			
Long-term, Systemic, Derr Long-term, Systemic, Inha Long-term, Systemic, Oral	nal lation	250 mg/kg bw/day 89.96 mg/m3 25 mg/kg bw/day		
Propane -1,2 -diol (CAS 57-55-	-6)			
Long-term, Local, Inhalatic Long-term, Systemic, Inha	on lation	10 mg/m3 50 mg/m3	15 5	Repeated dose toxicity Repeated dose toxicity
<u>Workers</u>				
Components		Value	Assessment factor	Notes
Alcohols, C7-9-iso-, C8-rich (C	AS 68526-83-0)	1		
Long-term, Systemic, Derr Long-term, Systemic, Inha	nal lation	416.67 mg/kg bw/day 293.86 mg/m3		
Propane -1,2 -diol (CAS 57-55-	-6)			
Long-term, Local, Inhalatic Long-term, Systemic, Inha	on lation	10 mg/m3 168 mg/m3	9 3	Repeated dose toxicity Repeated dose toxicity
dicted no effect concentration	ns (PNECs)			
Components	AO 00500 00	Value	Assessment factor	Notes
Alcohols, C7-9-iso-, C8-rich (C	as 68526-83-0)		10	
⊢resnwater Marine water		0.028 mg/l 0.003 mg/l	10 100	
Sediment (freshwater) Sediment (marine water) Soil		0.21 mg/kg 0.021 mg/kg 0.08 mg/kg	100	
STP		5.1 mg/l	10	
Octan-1-ol (CAS 111-87-5)				
Freshwater Marine water Sediment (freshwater) Sediment (marine water) Soil		0.2 mg/l 0.02 mg/l 2.1 mg/kg 0.21 mg/kg 1.6 mg/kg	5 50	
STP		55.5 mg/l	100	
Propane -1,2 -diol (CAS 57-55-	-6)			
Freshwater Marine water Sediment (freshwater) Sediment (marine water) Soil STP		260 mg/l 26 mg/l 572 mg/kg 57.2 mg/kg 50 mg/kg 20000 mg/l	50 500 1	
Exposure controls		,		
propriate engineering strols	Good general v applicable, use maintain airbor established, ma	ventilation should be used. process enclosures, local ne levels below recommen aintain airborne levels to ar	Ventilation rates should be exhaust ventilation, or ot ded exposure limits. If ex acceptable level. Provid	be matched to conditions. If her engineering controls to posure limits have not been le eyewash station.
ividual protection measures, s	such as person	al protective equipment		
General information	Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.		CEN standards and in	
Eye/face protection	Wear safety gla splashing. Eye	asses with side shields (or protection should meet sta	goggles). Wear a face sh ndard EN 166.	ield if there is a risk of
Skin protection				
- Hand protection	Wear suitable grecommended.	gloves tested to EN374. Nit	rile, butyl rubber or Viton	(fluoroelastomers) gloves are
- Other	Normal work clothing (long sleeved shirts and long pants) is recommended.			
Respiratory protection	In case of inad equipment with	equate ventilation or risk of a gas filter (type A2).	inhalation of vapours, us	e suitable respiratory
Thermal hazards	Not applicable.			
giene measures	Always observe and before eati equipment to re	e good personal hygiene m ing, drinking, and/or smokir emove contaminants.	easures, such as washin ng. Routinely wash work	g after handling the material clothing and protective

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels. Environmental manager must be informed of all major releases.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Liquid.
Colour	White.
Odour	Sweet, pungent.
Odour threshold	Not available.
рН	Property has not been measured.
Melting point/freezing point	< -40 °C (< -40 °F)
Initial boiling point and boiling range	185 °C (365 °F)
Flash point	83 °C (181.4 °F)
Evaporation rate	Less than water.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or exp	losive limits
Explosive limit - lower (%)	Property has not been measured.
Explosive limit – upper (%)	Property has not been measured.
Vapour pressure	1 mmHg (37.8°C)
Vapour density	< 1 (Air = 1)
Relative density	> 0.83 - < 0.91 (25°C / 77°F)
Solubility(ies)	
Solubility (water)	Negligible in water.
Partition coefficient (n-octanol/water)	Property has not been measured.
Auto-ignition temperature	Property has not been measured.
Decomposition temperature	Property has not been measured.
Viscosity	150 cP 511s-1 (Non-Newtonian) (25 °C)
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.
9.2. Other information	
Kinematic viscosity	Property has not been measured.
SECTION 10: Stability and	reactivity
10.1. Reactivity	The product is stable and non-reactive under normal conditions of use, storage and t

10.1. Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
10.4. Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
10.5. Incompatible materials	Strong oxidising agents.
10.6. Hazardous decomposition products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

SECTION 11: Toxicological information

General information	Occupational exposure to the substance or mixture may cause adverse effects	
Information on likely routes of ex	posure	
Inhalation	Prolonged inhalation may be harmful.	
Skin contact	Prolonged skin contact may cause temporary irritation.	
Eye contact	Causes serious eye irritation.	
Ingestion	May cause discomfort if swallowed.	

Symptoms Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

11.1. Information on toxicological effects

Acute toxicity	Not expected to be acutely toxic.			
Components	Species	Test Results		
Propane -1,2 -diol (CAS 57-55-6)				
<u>Acute</u>				
Dermal				
LD50	Rabbit	20800 mg/kg		
Oral				
LD50	Rat	22000 mg/kg		
Skin corrosion/irritation	Prolonged skin contact m	ay cause temporary irritation.		
Corrosivity				
RP™ II Flow Improver	OECD 404			
		Result: Very slight irritant Species: Rabbit		
Serious eye damage/eye	Causes serious eye irritat	ion.		
irritation	,			
Respiratory sensitisation	No information available of	n the mixture. However, none of the components are classified in		
	respect of this hazard (or classification).	are present at a level below the concentration threshold for		
Skin sensitisation	No information available on the mixture. However, none of the components are classified in respect of this bazard (or are present at a level below the concentration threshold for			
	classification).			
Germ cell mutagenicity	No information available on the mixture. However, none of the components are classified			
	respect of this hazard (or classification).	are present at a level below the concentration threshold for		
Carcinogenicity	No information available of	on the mixture. However, none of the components are classified in		
	respect of this hazard (or classification).	are present at a level below the concentration threshold for		
Reproductive toxicity	No information available on the mixture. However, none of the components are classified in			
	respect of this hazard (or classification).	are present at a level below the concentration threshold for		
Specific target organ toxicity -	No information available of	n the mixture. However, none of the components are classified in		
single exposure	respect of this hazard (or are present at a level below the concentration threshold for classification)			
Specific target organ toxicity -	No information available of	on the mixture. However, none of the components are classified in		
repeated exposure	respect of this hazard (or are present at a level below the concentration threshold for classification).			
Aspiration hazard	Not an aspiration hazard.			
Mixture versus substance information	No information available.			
Other information	None known.			

SECTION 12: Ecological information

12.1. Toxicity	Harmful to	Harmful to aquatic life with long lasting effects.		
Components		Species	Test Results	
Alcohols, C7-9-iso-, C8-ric	h (CAS 68526-83-0))		
Aquatic				
Acute				
Algae	ErC50	Pseudokirchnerella subcapitata	23 mg/l, 72 h	
Crustacea	LC50	Daphnia magna	31.8 mg/l, 48 h	
Fish	LC50	Pimephales promelas	14 mg/l, 96 h	
Chronic				
Crustacea	EC10	Ceriodaphnia dubia	0.28 mg/l, 6 day	
Fish	EC10	Pimephales promelas	> 0.28 mg/l, 33 day	

Components		Species	Test Results
Octan-1-ol (CAS 111-87-5)			
Aquatic			
Acute			
Fish	LC50	Fathead minnow (Pimephales promelas)	>= 12.3 - <= 13.4 mg/l, 96 hours
Propane -1,2 -diol (CAS 57-55-6)			
Aquatic			
Acute			
Algae	EC50	Selenastrum capricornutum	19000 mg/l, 72 hours
Crustacea	LC50	Ceriodaphnia	18340 mg/l, 48 hours
Fish	LC50	Pimephales promelas	46500 mg/l, 96 hours
12.2. Persistence and degradability	No data is ava	ilable on the degradability of this product.	
12.3. Bioaccumulative potential	The product is	not expected to bioaccumulate.	
Partition coefficient			
n-octanol/water (log Kow) Octan-1-ol (CAS 111-87-5)		3	
Bioconcentration factor (BCF)	Not available.		
12.4. Mobility in soil	Expected to have low mobility in soil and sediments with adsorption being the predominant physical process.		
12.5. Results of PBT and vPvB assessment	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.		
12.6. Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.		
SECTION 13: Disposal co	nsiderations		
13.1. Waste treatment methods			

Residual waste	Dispose in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
EU waste code	16 03 05* This code has been assigned based upon the most common uses for this material and may not reflect contaminants resulting from actual use. Waste generators/producers are responsible for assessing the actual process used when generating the waste and its contaminants in order to assign the proper waste disposal code.
	This material, if discarded as produced, should be assigned the following hazardous waste properties: HP 4, HP 14.
Disposal methods/information	Waste material from this product should not be exposed to waste streams or sumps containing any concentration of hydrocarbon. This will cause formation of gelled substances that may plug pipes. Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
Special precautions	Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. - 14.6.: Not regulated as dangerous goods.

RID

14.1. - 14.6.: Not regulated as dangerous goods.

ADN

14.1. - 14.6.: Not regulated as dangerous goods.

ΙΑΤΑ

14.1. - 14.6.: Not regulated as dangerous goods.

IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

14.7. Transport in bulkNot established.according to Annex II ofMARPOL 73/78 and the IBCCodeCode

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Retained direct EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended Not listed

Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended Not listed

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended Not listed

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended Not listed

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended Not listed

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA Not listed

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended Not listed

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use, as amended - Conditions of restriction given for the associated entry number should be considered

Not listed.

Other regulations

This product is classified and labelled in accordance with the retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain. This Safety Data Sheet is compiled in accordance with REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758.

15.2. Chemical safety	No Chemical Safety Assessment has been carried out
assessment	

SECTION 16: Other information List of abbreviations EC50: Effective Concentration, 50%. ErC50: EC50 in terms of reduction of growth rate. LC50: Lethal Concentration, 50%. LD50: Lethal Dose, 50%. PBT: Persistent, bioaccumulative, toxic. TWA: Time weighted average. vPvB: very Persistent, very Bioaccumulative. EPA: AQUIRE database References REACH Practical Guide on Safe Use Information for Mixtures under REACH, Version 6.1.1 31 August 2018; The Lead Component Identification (LCID) Methodology. The European Chemical Industry Council (Cefic) and Verband der Chemischen Industrie e.V. (VCI). Information on evaluation The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available. method leading to the classification of mixture Full text of any statements, which are not written out in full under sections 2 to 15 H315 Causes skin irritation. H319 Causes serious eye irritation. H412 Harmful to aquatic life with long lasting effects. Follow training instructions when handling this material. Training information Disclaimer LiquidPower Specialty Products Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

Table of contents

1. Safe use information for mixture: (SU2a, ERC4)

Safe Use Information for mixture

General description of the process covered

Use in onshore pipeline operations

List of use descriptors	
Sector(s) of Use	SU2a: Mining (without offshore industries)
Name of contributing environmental scenario and corresponding ERC	ERC4: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
List of names of contributing scenarios and corresponding PROCs	PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC8b: Transfer of substance or mixture (charging/discharging) at dedicated facilities
Operational conditions	
Maximum duration	Covers daily exposures up to 8 hours
Air exchange rate	Provide a good standard of controlled ventilation (5 to 10 air changes per hour).
Other	Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature.
Risk management measur	29

Risk management measures

Goggles. Gloves. For further specification, refer to section 8 of the SDS.

Conditions and measures related to personal protection equipment (PPE), hygiene and health evaluation and the environment

oggies. Gloves, For further specification, refer to section o of the St



Environmental measures

Prevent that undiluted product reaches surface waters. Sewage treatment plant For the disposal of product residues and waste please refer to section 13 of the SDS.

Disclaimer

Following Occupational Health legislation, the employer of workers that use products that are assessed as safe following safe use information conditions remains responsible for communicating relevant use information to employees. When developing workplace instructions for employees, safe use information for mixture should always be considered in combination with the SDS and the label of the product.