

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** 12**Revision date** 20-June-2023**Supersedes date** 20-June-2023**1.2. Relevant identified uses of 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 the safety data sheet****Only Representative of a non-Community Manufacturer** Penman Consulting Limited**Address** Aspect House,
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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)

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CHEMTREC UK +44 870 820 0418

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SECTION 2: Hazards identification**2.1. Classification of the substance or mixture**

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

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

Serious eye damage/eye irritation	Category 2	H319 - Causes serious eye irritation.
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Environmental hazards

Hazardous to the aquatic environment, long-term aquatic hazard	Category 3	H412 - Harmful to aquatic life with long lasting effects.
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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

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 mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.

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	-	
Classification: Skin Irrit. 2;H315, Eye Irrit. 2;H319, Aquatic Chronic 3;H412					
Propane -1,2 -diol	15 - 20	57-55-6 200-338-0	01-2119456809-23-0028	-	#
Classification: -					
Octan-1-ol	2 - 10	111-87-5 203-917-6	01-2119486978-10-0012	-	
Classification: 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 measures

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 measures

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.

SECTION 5: Firefighting measures

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 release measures

6.1. Personal precautions, protective 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 ea

6.4. Reference to other sections

For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

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

UK. OELs. Workplace Exposure Limits (WELs) (EH40/2005 (Fourth Edition 2020)), Table 1

Components	Type	Value	Form
Propane -1,2 -diol (CAS 57-55-6)	TWA	474 mg/m ³	Total vapour and particulates.
		10 mg/m ³	Particulate.
		150 ppm	Total vapour and particulates.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures

Follow standard monitoring procedures.

Derived no effect levels (DNELs)

General population

Components	Value	Assessment factor	Notes
Alcohols, C7-9-iso-, C8-rich (CAS 68526-83-0)			
Long-term, Systemic, Dermal	250 mg/kg bw/day		
Long-term, Systemic, Inhalation	89.96 mg/m ³		

Long-term, Systemic, Oral	25 mg/kg bw/day		
Propane -1,2 -diol (CAS 57-55-6)			
Long-term, Local, Inhalation	10 mg/m3	15	Repeated dose toxicity
Long-term, Systemic, Inhalation	50 mg/m3	5	Repeated dose toxicity

Workers

Components	Value	Assessment factor	Notes
Alcohols, C7-9-iso-, C8-rich (CAS 68526-83-0)			
Long-term, Systemic, Dermal	416.67 mg/kg bw/day		
Long-term, Systemic, Inhalation	293.86 mg/m3		
Propane -1,2 -diol (CAS 57-55-6)			
Long-term, Local, Inhalation	10 mg/m3	9	Repeated dose toxicity
Long-term, Systemic, Inhalation	168 mg/m3	3	Repeated dose toxicity

Predicted no effect concentrations (PNECs)

Components	Value	Assessment factor	Notes
Alcohols, C7-9-iso-, C8-rich (CAS 68526-83-0)			
Freshwater	0.028 mg/l	10	
Marine water	0.003 mg/l	100	
Sediment (freshwater)	0.21 mg/kg		
Sediment (marine water)	0.021 mg/kg		
Soil	0.08 mg/kg		
STP	5.1 mg/l	10	
Octan-1-ol (CAS 111-87-5)			
Freshwater	0.2 mg/l	5	
Marine water	0.02 mg/l	50	
Sediment (freshwater)	2.1 mg/kg		
Sediment (marine water)	0.21 mg/kg		
Soil	1.6 mg/kg		
STP	55.5 mg/l	100	
Propane -1,2 -diol (CAS 57-55-6)			
Freshwater	260 mg/l	50	
Marine water	26 mg/l	500	
Sediment (freshwater)	572 mg/kg		
Sediment (marine water)	57.2 mg/kg		
Soil	50 mg/kg		
STP	20000 mg/l	1	

8.2. Exposure controls

Appropriate engineering controls Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If expos

Individual protection measures, such as personal 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.
Eye/face protection	Wear safety glasses with side shields (or goggles). Wear a face shield if there is a risk of splashing. Eye protection should meet standard EN 166.
Skin protection	
- Hand protection	Wear suitable gloves tested to EN374. Nitrile, butyl rubber or Viton (fluoroelastomers) gloves are recommended.
- Other	Normal work clothing (long sleeved shirts and long pants) is recommended.
Respiratory protection	In case of inadequate ventilation or risk of inhalation of vapours, use suitable respiratory equipment with gas filter (type A2).
Thermal hazards	Not applicable.

Hygiene measures Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental exposure controls 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 reduc

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.
pH	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 explosive 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 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 exposure

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)		
Acute		
Dermal		
LD50	Rabbit	20800 mg/kg
Oral		
LD50	Rat	22000 mg/kg
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.	
Corrosivity		
RP™ II Flow Improver	OECD 404	Result: Very slight irritant Species: Rabbit
Serious eye damage/eye irritation	Causes serious eye irritation.	
Respiratory sensitisation	No information available on the mixture. However, none of the components are classified in respect of this hazard (or are present at a level below the concentration threshold for classification).	
Skin sensitisation	No information available on the mixture. However, none of the components are classified in respect of this hazard (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 in respect of this hazard (or are present at a level below the concentration threshold for classification).	
Carcinogenicity	No information available on the mixture. However, none of the components are classified in respect of this hazard (or are present at a level below the concentration threshold for classification).	
Reproductive toxicity	No information available on the mixture. However, none of the components are classified in respect of this hazard (or are present at a level below the concentration threshold for classification).	
Specific target organ toxicity - single exposure	No information available on the mixture. However, none of the components are classified in respect of this hazard (or are present at a level below the concentration threshold for classification).	
Specific target organ toxicity - repeated exposure	No information available on the mixture. However, none of the components are classified in 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 aquatic life with long lasting effects.

Components	Species	Test Results
Alcohols, C7-9-iso-, C8-rich (CAS 68526-83-0)		
Aquatic		
<i>Acute</i>		
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
<i>Chronic</i>		
Crustacea	EC10	Ceriodaphnia dubia 0.28 mg/l, 6 day
Fish	EC10	Pimephales promelas > 0.28 mg/l, 33 day
Octan-1-ol (CAS 111-87-5)		
Aquatic		
<i>Acute</i>		
Fish	LC50	Fathead minnow (Pimephales promelas) >= 12.3 - <= 13.4 mg/l, 96 hours

Components	Species	Test Results
Propane -1,2 -diol (CAS 57-55-6)		
Aquatic		
<i>Acute</i>		
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 available 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 mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.	
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 considerations

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.
Disposal methods/information	This material, if discarded as produced, should be assigned the following hazardous waste properties: HP 4, HP 14. 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
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.

IATA

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

IMDG

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

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not established.

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 authorization, 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.

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

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 Regulation

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

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.

References

EPA: AQUIRE database
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 Industr

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

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.

Training information

Follow training instructions when handling this material.

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

Annex to the extended Safety Data Sheet (eSDS)

Table of contents

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

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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 measures

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

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



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.