

Safety Data Sheet

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by
Regulation (EU) No 830/2015

Revision 2, Replaces Rev. 1

Revised: March 2019

PETROFLAG REAGENTS – KIT ONLY

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

1.1. Product identifier

Product Description: The PetroFLAG product line is an On-Site test kit for quantifying petroleum hydrocarbons in soil.

This product is a mixture. For identification of the individual components, see section 3.

1.2. Relevant identified uses of the substance or mixture and uses against

This product contains prepackaged reagents for the analysis of soil for petroleum hydrocarbon contamination.

1.3. Details of the supplier of the safety data sheet

Manufacturer: Dexsil Corporation
One Hamden Park Drive
Hamden, CT 06517

Telephone Number: (203) 288-3509
Email: info@dexsil.com

Importer: ETI Umwelttechnik AG
Kalchbuhlstrasse 18
7007 Chur, Switzerland

Telephone Number: (081) 253 54 54
Email: info@eti-swiss.com

1.4. Emergency telephone number

USA (800) 424-9300 (CHEMTREC) SWITZERLAND (435) 08 20 11

Section 2: Hazards Identification

2.1. Classification of the substance or mixture

Ampule 1 (Extract Solvent \ Methanol Solution)

Flam. Liq. 2;H225 Highly Flammable liquid and vapor.
Acute Tox. 3;H301 Toxic if swallowed.
Acute Tox. 3;H311 Toxic in contact with skin.

Acute Tox. 3;H331 Toxic if inhaled.
STOT SE 1;H370 Causes damage to organs. Specific Target
Organs: (Not Available)

Ampule 2 (Calibration Standard\Methanol Solution)

Flam. Liq. 2;H225 Highly Flammable liquid and vapor.
Acute Tox. 3;H301 Toxic if swallowed.
Acute Tox. 3;H311 Toxic in contact with skin.

Acute Tox. 3;H331 Toxic if inhaled.
STOT SE 1;H370 Causes damage to organs.
Specific Target Organs: (Not Available)

Ampule 3 (Screw-top Vial\5% NaCl Solution)

No applicable GHS categories.

2.2. Label elements

Ampule 1 (Extract Solvent \ Methanol Solution)



Danger

H225 Highly flammable liquid and vapor.
H301 Toxic if swallowed.
H311 Toxic in contact with skin.

H331 Toxic if inhaled.
H370 Causes damage to organs.

[Prevention]:

P210 Keep away from heat / sparks / open flames / hot surfaces - No smoking.

P241 Use explosion-proof electrical / ventilating / light / equipment.

P261 Avoid breathing dust / fume / gas / mist / vapors / spray.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves / eye protection / face protection.

[Response]:

P301+310 IF SWALLOWED: Immediately call a POISON CENTER or doctor / physician.

P302+352 IF ON SKIN: Wash with plenty of soap and water.

P303+361+353 IF ON SKIN (or hair): Remove / Take off immediately all contaminated clothing. Rinse skin with water / shower.

P304+312 IF INHALED: Call a POISON CENTER or doctor / physician if

you feel unwell.

P307+311 IF exposed: Call a POISON CENTER or doctor / physician.

P321 Specific treatment (see information on this label).

P330 Rinse mouth.

P340 Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P363 Wash contaminated clothing before reuse.

P370+378 In case of fire: Use extinguishing media listed in section 5 of SDS for extinction.

[Storage]:

P403+233 Store in a well ventilated place. Keep container tightly closed.

P405 Store locked up.

[Disposal]:

P501 Dispose of contents / container in accordance with local / national regulations.

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P405 Store locked up.

[Disposal]:

P501 Dispose of contents / container in accordance with local / national regulations.

Ampule 3 (Screw-top Vial\5% NaCl Solution)

No applicable GHS categories.

For additional information on toxicity, please refer to Section 11.

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**

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The PetroFLAG Test Reagent Kit consists of two break-top ampules (extraction solvent and calibration solvent) and a screw top vial. Screw top vial contents are non-hazardous. The PetroFLAG High Range Reagents consist of one break-top ampule.

Component	Contents	CAS#	EC#	GHS Classification	% liquid
Ampule 1 Extract Solvent	Methanol Solution ¹	67-56-1	200-659-6	Flam. Liq. 2;H225 Acute Tox. 3;H331 Acute Tox. 3;H311 Acute Tox. 3;H301 STOT SE 1;H370	62.00%
Ampule 2 Calibration Standard	Methanol Solution ¹	67-56-1	200-659-6	Flam. Liq. 2;H225 Acute Tox. 3;H331 Acute Tox. 3;H311 Acute Tox. 3;H301 STOT SE 1;H370	6.00%
Screw-top Vial	5% NaCl Solution	7647-14-5	231-598-3		32.00%
					100.00%

¹A REACH registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

Section 4: First aid measures

4.1. Description of first aid measures

First Aid

In case of contact with reagents, rinse well with water.

Eye Contact

For all kit components, flush eyes with large amounts of water for 15 minutes. Seek medical attention.

Skin contact

Flush with large amounts of water. Use soap and water to wash away organic components.

Inhalation

In case of inhalation, remove to fresh air. Seek medical attention.

Ingestion: If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

4.2. Most important symptoms and effects, both acute and delayed

Acute

Poison. May be fatal if swallowed. If swallowed there is a risk of blindness. Toxic if swallowed, in contact with skin or if inhaled. Ingestion causes nausea, weakness and central nervous system effects, headache, vomiting, dizziness, symptoms of drunkenness. Coma and death due to respiratory failure may follow severe exposures: Medical treatment necessary. A latent period of several hours may occur between exposure and the onset of symptoms.

Delayed

Causes damage to organs through prolonged or repeated exposure.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively. The severity of symptoms depends upon the length and concentration of the exposure. If ingested, get immediate medical attention. Antidote: Fomepizole enhances elimination of metabolic formic acid. Antidote should be administered by qualified medical personnel.

Note to Physicians

Treat symptomatically. The severity of outcome following methanol ingestion may be more related to the time between ingestion and treatment, rather than the amount ingested. Therefore, there is a need for rapid treatment of any ingestion exposure. Call a POISON CENTER. No data available.

Section 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide, regular dry powder, water spray, alcohol resistant foam, sand. Use water spray to cool fire fire-exposed containers. Water will not cool methanol below its flash point. Collect spillage.

Unsuitable Extinguishing Media

Do not use high-pressure water streams.

5.2 Special hazards arising from the substance or mixture

Highly flammable liquid and vapor. Mixtures >20% methanol with water: flammable. May form explosive mixture with air. Vapors are heavier than air and may travel along the ground to some distant source of ignition and flash back. Containers may rupture or explode if exposed to heat. Dangerous gases may accumulate in confined spaces. Toxic.

Combustion

Releases toxic gases, vapors. Carbon monoxide, carbon dioxide, formaldehyde.

5.3 Advice for firefighters

Methanol: Burns with invisible flame. Flame may not be visible in daylight. Cool containers with water spray until well after the fire is out.

Fire Fighting Measures

Do not allow run-off from fire-fighting to enter drains or water courses. Keep unnecessary people away, isolate hazard area and deny entry.

Protective Equipment and Precautions for Firefighters

Wear full protective firefighting gear including self-contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment incl., chemical safety glasses and rubber gloves. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations.

6.2. Environmental precautions

Keep out of drains and surface water. Dispose in accordance with all applicable federal, state/regional and local laws and regulations.

6.3. Methods for material containment and cleaning up

Solvent absorbent recommended for spills. Flush area with water.

6.4 Reference to other sections

For disposal see section 13

Section 7: Handling and storage**7.1. Precautions for safe handling**

Use in a well ventilated area. Wear personal protective clothing and equipment, see Section 8. Eliminate all sources of ignition. No smoking. Use good industrial hygiene practices. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and leaving work. Do not breathe vapor.

7.2. Conditions for safe storage, including any incompatibilities

Store test kits in a cool, dry place. Check expiration date prior to performing test.

7.3. Specific end use(s)

Apart from the uses mentioned in section 1.2, no other specific uses are stipulated.

Section 8: Exposure controls/personal protection**8.1. Control parameters**

Component	MAK	BAT
Ethanol	500 ppm, 960 mg/m ³	
Methanol	200 ppm, 270 mg/m ³	30 mg/L

Ampules 1 & 2 Component - Methanol
Derived No Effect Levels (DNELs)
DNEL/DMEL (Workers)

Acute - systemic effects, dermal	40 mg/kg bw/day
Acute - systemic effects, inhalation	260 mg/m ³
Acute - local effects, dermal	not quantifiable
Acute - local effects, inhalation	260 mg/m ³
Long-term - systemic effects, dermal	40 mg/kg bw/day
Long-term - systemic effects, inhalation	260 mg/m ³
Long-term - local effects, dermal	not quantifiable
Long-term - local effects, inhalation	260 mg/m ³
DNEL/DMEL (General Population)	
Acute - systemic effects, dermal	8 mg/kg bw/day
Acute - systemic effects, inhalation	50 mg/m ³
Acute - systemic effects, oral	8 mg/kg bw/day
Acute - local effects, dermal	not quantifiable
Acute - local effects, inhalation	50 mg/m ³
Long-term - systemic effects, dermal	8 mg/kg bw/day
Long-term - systemic effects, inhalation	50 mg/m ³
Long-term - systemic effects, oral	8 mg/kg bw/day
Long-term - local effects, dermal	not quantifiable
Long-term - local effects, inhalation	50 mg/m ³

Predicted No Effect Concentration (PNECs)

PNEC (Water)

PNEC aqua (freshwater)	154 mg/l
PNEC aqua (marine water)	15.4 mg/l
PNEC aqua (intermittent releases)	1540 mg/L

PNEC (Sediment)

PNEC sediment (freshwater)	570.4 mg/l
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PNEC (Soil)

PNEC soil	23.5 mg/kg.w.
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PNEC sewage treatment plant

PNEC stp	100 mg/L
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8.2. Exposure controls

Engineering Controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the work day.

Personal Protective Equipment (PPE)

Respiratory protection	None required during normal use.
Ventilation	Perform test only in a well-ventilated area. Avoid breathing vapors.
Protective gloves	Always wear rubber gloves when performing the test.
Eye protection	Wear safety glasses.
General Hygiene Measures	Avoid contact with skin, eyes and clothing. Wash after running tests.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<u>Property</u>	<u>Ampule 1</u>	<u>Ampule 2</u>	<u>Screw-top Vial</u>
Boiling Pt. °C	64.5	64.5	N/A
Vapor Pressure mm Hg @ 21°C	97	97	N/A
Solubility in Water	miscible	miscible	complete
Specific Gravity	0.79	0.79	1.01
Percent Volatile	99.9	99.9	N/A
Evaporation Rate Butyl Acetate =1	5.9	5.9	N/A
Appearance	clear	clear	clear

Odor	pleasant	pleasant	none
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N/A = not available

Section 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under conditions of normal use.

10.2. Chemical stability

All components are stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Will not polymerize.

10.4. Conditions to avoid

Heat, sparks, open flame.

10.5. Incompatible materials

Strong oxidizing agents and strong inorganic acids.

10.6. Hazardous decomposition products

Combustion will generate carbon dioxide and possibly carbon monoxide.

Section 11: Toxicological information

11.1. Information on toxicological effects

Ampules 1 & 2 Component - Ethanol

Acute Toxicity: Oral Rat LD50:7060 mg/kg; Inhalation Rat LC50:124700 mg/m³/4H

Irritation: Eye Rabbit 500 mg SEV; Skin Rabbit 20 mg/24H MOD

Mutagen: dlt-mus-ori 3720 mg/kg/3D; spm-mus-ori 1500 mg/kg/50D; dnd-rat-ori 4 gm/kg

Reproductive: Oral Rat TDLo:90 mg/kg (30D male); Oral Rat TDLo:147 mg/kg (121D preg); Oral Rat TDLo:22.5 gm/kg (1120D preg); Oral Rat TDLo:120 gm/kg (615D preg); Oral Woman TDLo:250 mg/kg (37W preg); Oral Woman TDLo:41 gm/kg (41W preg); Oral Woman TDLo:5860 mL/kg (3Y pre100D post); Inhalation Rat TCLo:20000 ppm/7H (1 22D preg)

Ampules 1&2 Component – Methanol

Acute Toxicity: Oral LD50 Rat 5600 mg/kg; Dermal LD50 Rabbit 15800 mg/kg; Inhalation LC50 Rat 64000 ppm 4 h

Acute Toxicity Estimates: Dermal 300mg/kg; Inhalation – Vapor 3mg/L; Oral 100mg/kg

Corrosion/irritation

May cause irritation to eyes, skin and respiratory tract.

Germ cell mutagenicity

No data available.

Carcinogenicity

No data available.

Reproductive toxicity

No data available.

Specific target organ toxicity - single exposure

Methanol - optic nerve, central nervous system

Ethanol - Central Nervous System (CNS), Liver

Specific target organ toxicity - repeated exposure

Chronic exposure to ethanol can cause damage to the liver, kidney and heart.

Aspiration hazard

No data available.

Section 12: Ecological information

12.1. Toxicity

Ethanol: Ecotoxicity: Fish: Rainbow trout: LC50 = 12900-15300 mg/L; 96 Hr; Flow-through @ 24-24.3°C Fish: Rainbow trout: LC50 = 11200 mg/L; 24 Hr; Fingerling (Unspecified) Bacteria: Phytobacterium phosphoreum: EC50 = 34900 mg/L;

5-30 min; Microtox test When spilled on land it is apt to volatilize, biodegrade, and leach into the ground water, but no data on the rates of these processes could be found. Its fate in ground water is unknown. When released into water it will volatilize and probably biodegrade. It would not be expected to adsorb to sediment or bioconcentrate in fish.

Methanol: Ecotoxicity: Fish: LC50 96 h Pimephales promelas 28200 mg/L [flow-through]; LC50 96 h Pimephales promelas >100 mg/L [static]; LC50 96 h Oncorhynchus mykiss 19500 - 20700 mg/L [flow-through]; LC50 96 h Oncorhynchus mykiss 18 - 20 mL/L [static]; LC50 96 h Lepomis macrochirus 13500 - 17600 mg/L [flow-through]; Algae: EC50 72 hr Selenastrum capricornutum 22000 mg/L; Invertebrate: EC50 48 hr Daphnia >10000 mg/L

12.2. Persistence and degradability

Methanol - Rapidly degradable.

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

Methanol and ethanol - mobile.

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 data available.

Section 13: Disposal considerations

13.1. Waste treatment methods

Used reagents contain oil and solvent. Dispose of as an organic waste in accordance with all applicable federal, state and local environmental regulations.

Section 14: Transportation information

14.1. UN number

ADR, RID, ICAO, IATA, ADN, IMDG: UN1986

14.2. UN proper shipping name

ADR, RID, ICAO, IATA, ADN, IMDG: ALCOHOLS, FLAMMABLE, TOXIC, N.O.S. (METHANOL/ETHANOL)

IATA

When shipped as originally packaged, may be shipped as: Dangerous Goods in Excepted Quantities

IATA UN Number: 1986

Hazard Class: 3 (6.1)

Packing Group: II

14.3. UN transport hazard class(es):

ADR, RID, ICAO, IATA, ADN, IMDG: 3 (6.1)

14.4. Packing group:

ADR, RID, ICAO, IATA, ADN, IMDG: II

14.5. Environmental hazards:

ADR, RID, ICAO, IATA, ADN, IMDG: No

14.6. Special precautions for user:

ADR, RID, ICAO, IATA, ADN, IMDG: None

14.7. Transport in Bulk According to Annex II of MARPOL and the IBC Code:

ADR, RID, ICAO, IATA, ADN, IMDG: Not relevant

14.8. Additional information:

ADR, RID, ICAO, IATA, ADN, IMDG: Not relevant

Section 15: Regulatory information

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

This SDS complies with the requirements of Regulation (EC) No. 1907/2006

Authorizations and/or restrictions on use

EU - REACH (1907/2006) - Annex XIV List of Substances Subject to Authorization

No components of this material are listed.

EU - REACH (1907/2006) - Article 59(1) Candidate List of Substances Subject to Authorization

No components of this material are listed.

EU - REACH (1907/2006) - Annex XVII Restrictions of Certain Dangerous Substances, Mixtures and Articles

No components of this material are listed.

EU - Substances Depleting the Ozone layer (1005/2009)

No components of this material are listed

EU - Persistent Organic Pollutants (850/2004)

No components of this material are listed

EU - Export and Import Restrictions (689/2008) - Chemicals and Articles Subject to Export Ban

No components of this material are listed

EU - Seveso III Directive (2012/18/EU) - Qualifying Quantities of Dangerous Substances

No components of this material are listed

EU - Plant Protection Products (1107/2009/EC)

No components of this material are listed

EU - Biocides (528/2012/EU)

No components of this material are listed

EU - Water Framework Directive (2000/60/EC) - amended by Directive 2008/105/EC

No components of this material are listed

EU - Limitation of Emissions of Volatile Organic Compounds Due to the Use of Organic Solvents in Certain Activities and Installations (1999/13/EC)

No components of this material are listed

EU Detergent Regulation 648/2004/EC

No components of this material are listed

EINECS: Components of this product are on the European Inventory of Existing Commercial Chemical Substances.

Swiss Regulatory Information:

Federal Act on Protection against Dangerous Substances and Preparations (Chemicals Act, ChemA) of 15 December 2000 (Status as of 13 June 2006) SR 813.1

Ordinance on Protection against Dangerous Substances and Preparations (Chemicals Ordinance, ChemO) of 18 May 2005 (Status as of 15 July 2014) 813.11

Ordinance on the Reduction of Risks relating to the Use of Certain Particularly Dangerous Substances, Preparations and Articles (Chemical Risk Reduction Ordinance, ORRChem) of 18 May 2005 (Status as of 1 January 2014) SR 814.81

Federal Act on the Protection of the Environment (Environmental Protection Act, EPA) of 7 October 1983 (Status as of 1 July 2014) 814.01

Fifth Ordinance on the federal Act about Work (Occupational Safety For The Youth) ArGV 5 of 28 September 2007 (Status as of 1 August 2014) SR 822.115.2

Ordinance from the department of Economy, Education and Research on dangerous and difficult chores during pregnancy and maternity (Maternity Protection Ordinance) of 20 March 2001 (Status as of 1 January 2013) SR 822.111.52

Ordinance from the department of Environment, Traffic, Energy and Communications about Lists on the traffic of waste of 18 October 2005 (Status as of 1 January 2010) SR 814.610.1

Federal Act on Work in Industry, Trade and Commerce (Federal Act on Work) of 13 March 1964 (Status as of 1 December 2013)

Section 16: Other information

The information in this Safety Data Sheet meets the requirements of Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Regulation (EU) No 830/2015. This document is intended only as a guide to the appropriate precautionary handling of the material by a person trained in, or supervised by a person trained in, chemical handling. The user is responsible for determining the precautions and danger of these chemicals for his or her particular application. Depending on usage, protective clothing including eye and face guards

and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have serious adverse health effects. These chemicals may interact with other substances. Since the potential uses are so varied, Dexsil cannot warn of all of the potential dangers of use or interaction with other chemicals or materials. Dexsil warrants that the chemicals meet the specifications set forth on the label.

DEXSIL DISCLAIMS ANY OTHER WARRANTIES; EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, IT'S MERCHANTABILITY OR ITS FITNESS FOR A PARTICULAR PURPOSE.

The user should recognize that this product can cause severe injury and even death, especially if improperly handled or the known dangers of use are not heeded. READ ALL PRECAUTIONARY INFORMATION. As new documented general safety information becomes available, Dexsil will periodically revise this Safety Data Sheet.

CHEMTREC emergency telephone number is to be used ONLY in the event of CHEMICAL EMERGENCIES involving a spill, leak, fire, exposure, or accident involving chemicals.

For additional information, contact Dexsil.