HALLIBURTON

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

THYMOLPHTHALEIN INDICATOR SOLUTION (51220, 51223)

Revision Date: 15-Sep-2015 **Revision Number:** 11

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

1.1. Product Identifier

Product Name THYMOLPHTHALEIN INDICATOR SOLUTION (51220, 51223)
Internal ID Code HM004004

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

Recommended Use Reagent

1.3. Details of the supplier of the safety data sheet

Halliburton Energy Services
Halliburton House, Howemoss Place
Kirkhill Industrial Estate
Dyce
Aberdeen, AB21 0GN
United Kingdom

www.halliburton.com

For further information, please contact
E-Mail address: fdunexchem@halliburton.com

1.4. Emergency telephone number

+44 8 08 189 0979 / 1-760-476-3961

Emergency telephone - §45 - (EC)1272/2008	
Europe	**112**
Croatia	Centar za kontrolu otrovanja (CKO): (+385 1) 23-48-342 (Poison Control Center (PCC) - Institute for Medical Research and Occupational Health)
Cyprus	+210 7793777
Denmark	Poison Control Hotline (DK): +45 82 12 12 12
France	ORFILA (FR): + 01 45 42 59 59
Germany	Poison Center Berlin (DE): +49 030 30686 790
Italy	Poison Center, Milan (IT): +39 02 6610 1029
Netherlands	National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)
Norway	Poisons Information (NO):+ 47 22 591300
Poland	Poison Control and Information Centre, Warsaw (PL): +48 22 619 66 54; +48 22 619 08 97
Romania	+40 21 318 36 06
Spain	Poison Information Service (ES): +34 91 562 04 20
United Kingdom	NHS Direct (UK): +44 0845 46 47

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Serious Eye Damage / Eye Irritation	Category 2 - H319
Germ Cell Mutagenicity	Category 2 - H341
Carcinogenicity	Category 1B - H350
Reproductive Toxicity	Category 2 - H361
Specific Target Organ Toxicity - (Single Exposure)	Category 3 - H336

Flammable liquids.	Category 2 - H225

2.2. Label Elements

Hazard Pictograms

Signal Word **Danger**

Hazard Statements
H225 - Highly flammable liquid and vapor
H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness
H341 - Suspected of causing genetic defects
H350 - May cause cancer
H361 - Suspected of damaging fertility or the unborn child

Precautionary Statements - EU (§28, 1272/2008)
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

Contains

Substances	**CAS Number**
Isopropanol	67-63-0
Thymolphthalein	125-20-2

2.3. Other Hazards
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

SECTION 3: Composition/information on Ingredients

3.2. Mixtures Mixture

Substances	EINECS	CAS Number	PERCENT (w/w)	EU - CLP Substance Classification	REACH No.
Isopropanol	200-661-7	67-63-0	30 - 60%	Eye Irrit. 2 (H319) STOT SE 3 (H336) Flam. Liq. 2 (H225)	01-2119457558-25
Thymolphthalein	204-729-7	125-20-2	1 - 5%	Muta. 2 (H341) Carc. 1B (H350) Repr. 2 (H361)	No data available

For the full text of the H-phrases mentioned in this Section, see Section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation If inhaled, move victim to fresh air and seek medical attention.
Eyes In case of contact, or suspected contact, immediately flush eyes with plenty of

	water for at least 15 minutes and get medical attention immediately after flushing.
Skin	In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.
Ingestion	Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

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

Causes eye irritation. May cause headache, dizziness, and other central nervous system effects. May cause heritable genetic damage. May cause birth defects. Prolonged or repeated exposure may cause blood forming system, nervous, urinary tract and reproductive system damage. Carcinogen.

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

Notes to Physician Treat symptomatically

SECTION 5: Firefighting Measures

5.1. Extinguishing media

Suitable Extinguishing Media

Carbon dioxide, dry chemical, foam.

Extinguishing media which must not be used for safety reasons

None known.

5.2. Special hazards arising from the substance or mixture

Special Exposure Hazards

May be ignited by heat, sparks or flames. Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. Decomposition in fire may produce harmful gases. Vapors are heavier than air and may accumulate in low areas. Vapors may travel along the ground to be ignited at distant locations.

5.3. Advice for firefighters

Special Protective Equipment for Fire-Fighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Remove sources of ignition. Use appropriate protective equipment. Wear self-contained breathing apparatus in enclosed areas. Avoid breathing vapors. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Evacuate all persons from the area.

See Section 8 for additional information

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas. Consult local authorities.

6.3. Methods and material for containment and cleaning up

Isolate spill and stop leak where safe. Remove ignition sources and work with non-sparking tools. Contain spill with sand or other inert materials. Scoop up and remove.

6.4. Reference to other sections

See Section 8 and 13 for additional information.

SECTION 7: Handling and Storage

7.1. Precautions for Safe Handling

Remove sources of ignition. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Ensure adequate ventilation. Launder contaminated clothing before reuse. Ground and bond containers when transferring from one container to another.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Store away from oxidizers. Store in a cool, dry location. Keep from heat, sparks, and open flames. Keep container closed when not in use.

7.3. Specific End Use(s)

Exposure Scenario No information available

Other Guidelines No information available

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Exposure Limits

Substances	CAS Number	EU	UK	Netherlands	France
Isopropanol	67-63-0	Not applicable	TWA: 400 ppm TWA: 999 mg/m³ STEL: 500 ppm STEL: 1250 mg/m³	Not applicable	STEL: 400 ppm STEL: 980 mg/m³
Thymolphthalein	125-20-2	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Germany	Spain	Portugal	Finland
Isopropanol	67-63-0	TWA: 200 ppm TWA: 500 mg/m³	TWA: 200 ppm TWA: 500 mg/m³ 400 ppm STEL [VLA-EC]; 1000 mg/m³ STEL [VLA-EC]	TWA: 200 ppm STEL: 400 ppm	TWA: 200 ppm TWA: 500 mg/m³ STEL: 250 ppm STEL: 620 mg/m³
Thymolphthalein	125-20-2	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Isopropanol	67-63-0	TWA: 200 ppm TWA: 500 mg/m³ STEL" 800 ppm STEL" 2000 mg/m³	200 ppm TWA 400 ppm STEL	TWA: 200 ppm TWA: 500 mg/m³ STEL: 400 ppm STEL: 1000 mg/m³	TWA: 100 ppm TWA: 245 mg/m³ STEL: 150 ppm STEL: 306.25 mg/m³
Thymolphthalein	125-20-2	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Isopropanol	67-63-0	Not applicable	TWA: 900 mg/m³ STEL: 1200 mg/m³	TWA: 500 mg/m³ STEL: 2000 mg/m³	TWA: 500 mg/m³
Thymolphthalein	125-20-2	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Denmark	Romania	Croatia	Cyprus
Isopropanol	67-63-0	TWA: 200 ppm TWA: 490 mg/m³	TWA: 81 ppm TWA: 200 mg/m³ STEL: 203 ppm STEL: 500 mg/m³	TWA: 400 ppm TWA: 999 mg/m³ STEL: 500 ppm STEL: 1250 mg/m³	Not applicable
Thymolphthalein	125-20-2	Not applicable	Not applicable	Not applicable	Not applicable

Derived No Effect Level (DNEL) No information available.

Worker

Substances	Long-term exposure - systemic effects, Inhalation	Acute / short term exposure - systemic effects, Inhalation	Long-term exposure - local effects, Inhalation	Acute / short term exposure - local effects, Inhalation	Long-term exposure - systemic effects, Dermal	Acute / short term exposure - systemic effects, Dermal	Long-term exposure - local effects, Dermal	Acute / short term exposure - local effects, Dermal	Hazards for the eyes - local effects
Isopropanol	500 mg/m³	Not available	Not available	Not available	888 mg/kg bw/day	Not available	Not available	Not available	Not available

General Population

Substances	Long-term exposure - systemic effects, Inhalation	Acute / short term exposure - systemic effects, Inhalation	Long-term exposure - local effects, Inhalation	Acute / short term exposure - local effects, Inhalation	Long-term exposure - systemic effects, Dermal	Acute / short term exposure - systemic effects, Dermal	Long-term exposure - local effects, Dermal	Acute / short term exposure - local effects, Dermal	Long-term exposure - systemic effects, Oral	Acute / short term exposure - local effects, Oral	Hazards for the eyes - local effects
Isopropanol	89 mg/m³	Not available	Not available	Not available	319 mg/kg bw/day	Not available	Not available	Not available	26 mg/kg bw/day	Not available	Not available

Predicted No Effect Concentration (PNEC) No information available.

Substances	Freshwater	Marine water	Intermittent release	Sewage treatment plant	Sediment (freshwater)	Sediment (marine water)	Air	Soil	Secondary poisoning
Isopropanol	140.9 mg/L	140.9 mg/L	140.9 mg/L	2251 mg/L	552 mg/kg sediment dw	552 mg/kg sediment dw	Not available	28 mg/kg soil dw	160 mg/kg food

8.2. Exposure controls

Engineering Controls Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

Personal protective equipment

If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection Organic vapor respirator.

Hand Protection Impervious rubber gloves.
Skin Protection Rubber apron.
Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.
Other Precautions Eyewash fountains and safety showers must be easily accessible.

Environmental Exposure Controls Do not allow material to contaminate ground water system

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State: Liquid
Color: Clear colorless
Odor: Alcohol
Odor Threshold: No information available

Property	Values	Remarks/ - Method
pH:	No data available	
Freezing Point/Range	No data available	
Melting Point/Range	No data available	
Boiling Point/Range	No data available	
Flash Point	21 °C / 70 °F PMCC	
Flammability (solid, gas)	No data available	
upper flammability limit	No data available	
lower flammability limit	No data available	
Evaporation rate	No data available	
Vapor Pressure	No data available	
Vapor Density	No data available	
Specific Gravity	No data available	
Water Solubility	Soluble in water	
Solubility in other solvents	No data available	
Partition coefficient: n-octanol/water	No data available	
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
Viscosity	No data available	
Explosive Properties	No information available	
Oxidizing Properties	No information available	

9.2. Other information

VOC Content (%) No data available

SECTION 10: Stability and Reactivity

10.1. Reactivity
Not expected to be reactive.
10.2. Chemical Stability
Stable
10.3. Possibility of Hazardous Reactions
Will Not Occur
10.4. Conditions to Avoid
Keep away from heat, sparks and flame.
10.5. Incompatible Materials
Stainless steel.
10.6. Hazardous Decomposition Products
Carbon monoxide and carbon dioxide.

SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity

Inhalation May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

Eye Contact Causes eye irritation.

Skin Contact May be absorbed through the skin and contribute to the symptoms listed under ingestion. May cause skin defatting with prolonged exposure. Can dry skin.

Ingestion May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation and central nervous system depression.

Chronic Effects/Carcinogenicity Repeated overexposure may cause liver and kidney effects. May cause heritable genetic damage. Suspected of damaging fertility or the unborn child.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Isopropanol	67-63-0	4396 mg/kg (Rat) 5840 mg/kg (Rat) 3600 mg/kg (Mouse)	12,800 mg/kg (Rat) 12,870 mg/kg (Rabbit) 6280 mg/kg (Rabbit)	72.6 mg/L (Rat) 4h > 10,000 mg/L (Rat) 6h
Thymolphthalein	125-20-2	> 3500 mg/kg (Rat) (similar substance)	No data available	No data available

Substances	CAS Number	Skin corrosion/irritation
Isopropanol	67-63-0	Non-irritating to the skin (Rabbit)
Thymolphthalein	125-20-2	No data of sufficient quality are available.

Substances	CAS Number	Eye damage/irritation
Isopropanol	67-63-0	Causes moderate eye irritation. (Rabbit)
Thymolphthalein	125-20-2	No data of sufficient quality are available.

Substances	CAS Number	Skin Sensitization
Isopropanol	67-63-0	Did not cause sensitization on laboratory animals (guinea pig)
Thymolphthalein	125-20-2	Did not cause sensitization on laboratory animals (similar substances)

Substances	CAS Number	Respiratory Sensitization
Isopropanol	67-63-0	No information available
Thymolphthalein	125-20-2	No information available

Substances	CAS Number	Mutagenic Effects
Isopropanol	67-63-0	In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects.
Thymolphthalein	125-20-2	In vitro tests have shown mutagenic effects (similar substances) Some in vivo tests have shown mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
Isopropanol	67-63-0	Did not show carcinogenic effects in animal experiments
Thymolphthalein	125-20-2	Available data indicate that this substance is a suspected carcinogen. (similar substances)

Substances	CAS Number	Reproductive toxicity
Isopropanol	67-63-0	No significant toxicity observed in animal studies at concentration requiring classification.
Thymolphthalein	125-20-2	Experiments have shown reproductive toxicity effects on laboratory animals (similar substances)

Substances	CAS Number	STOT - single exposure
Isopropanol	67-63-0	May cause headache, dizziness, and other central nervous system effects.
Thymolphthalein	125-20-2	No information available

Substances	CAS Number	STOT - repeated exposure
Isopropanol	67-63-0	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Thymolphthalein	125-20-2	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Substances	CAS Number	Aspiration hazard
Isopropanol	67-63-0	Not applicable
Thymolphthalein	125-20-2	Not applicable

SECTION 12: Ecological Information

12.1. Toxicity

Ecotoxicity Effects

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Isopropanol	67-63-0	EC50 (72h) > 1000 mg/L (Desmodesmus subspicatus) EC50 (7d) 1800 mg/L (Scenedesmus quadricauda)	LC50 (96h) 9640 mg/L (Pimephales promelas) LC50 (7d) 7060 mg/L (Poecilia reticulata)	TT (16h) 1050 mg/L (Pseudomonas putida)	EC50 (48h) 13,299 mg/L (Daphnia magna) EC50 (24h) > 10,000 mg/L (Daphnia magna)
Thymolphthalein	125-20-2	EC50 (72h) 8.9 mg/L (Desmodesmus subspicatus)(similar substances)	No information available	No information available	No information available

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Isopropanol	67-63-0	Readily biodegradable (53% @ 5d)
Thymolphthalein	125-20-2	(76% @ 28d)

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Isopropanol	67-63-0	0.05
Thymolphthalein	125-20-2	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Isopropanol	67-63-0	KOC = 1.5
Thymolphthalein	125-20-2	KOC = 7.329

12.5. Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

Substances	PBT and vPvB assessment
Isopropanol	Not PBT/vPvB
Thymolphthalein	Not PBT/vPvB

12.6. Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Disposal Method Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

SECTION 14: Transport Information

IMDG/IMO

UN Number:	UN1219
UN Proper Shipping Name:	Isopropanol Solution
Transport Hazard Class(es):	3
Packing Group:	II
Environmental Hazards:	Not applicable

RID

UN Number:	UN1219
UN Proper Shipping Name:	Isopropanol Solution
Transport Hazard Class(es):	3
Packing Group:	II
Environmental Hazards:	Not applicable

ADR

UN Number:	UN1219
UN Proper Shipping Name:	Isopropanol Solution
Transport Hazard Class(es):	3
Packing Group:	II
Environmental Hazards:	Not applicable

IATA/ICAO

UN Number:	UN1219
UN Proper Shipping Name:	Isopropanol Solution
Transport Hazard Class(es):	3
Packing Group:	II
Environmental Hazards:	Not applicable

14.1. UN Number: UN1219

14.2. UN Proper Shipping Name: Isopropanol Solution

14.3. Transport Hazard Class(es): 3

14.4. Packing Group: II

14.5. Environmental Hazards: Not applicable

14.6. Special Precautions for User: None

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

SECTION 15: Regulatory Information

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

International Inventories

EINECS Inventory	This product, and all its components, complies with EINECS
US TSCA Inventory	All components listed on inventory or are exempt.
Canadian DSL Inventory	All components listed on inventory or are exempt.

Legend
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

Germany, Water Endangering Classes (WGK) WGK 1: Low hazard to waters.

15.2. Chemical Safety Assessment
No information available

SECTION 16: Other Information

Full text of H-Statements referred to under sections 2 and 3
H225 - Highly flammable liquid and vapor

H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness
H341 - Suspected of causing genetic defects
H350 - May cause cancer
H361 - Suspected of damaging fertility or the unborn child

Key or legend to abbreviations and acronyms
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
ErC50 – Effective Concentration growth rate 50%
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL0 – Lethal Loading 0%
LL50 – Lethal Loading 50%
MARPOL – International Convention for the Prevention of Pollution from Ships
mg/kg – milligram/kilogram
mg/L – milligram/liter
NIOSH – National Institute for Occupational Safety and Health
NOEC – No Observed Effect Concentration
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
PC – Chemical Product category
PEL – Permissible Exposure Limit
ppm – parts per million
PROC – Process category
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
STEL – Short Term Exposure Limit
SU – Sector of Use category

Key literature references and sources for data
www.ChemADVISOR.com/
OSHA
ECHA C&L

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Revision Note
SDS sections updated: 1

This safety data sheet complies with the requirements of Regulation (EC) No. 453/2010

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End of Safety Data Sheet