

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

N-FLOW 412

Revision Date: 29-Nov-2010

Revision Number: 3

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product Name N-FLOW 412

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

Recommended Use Additive

Uses Advised Against No information available

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

Emergency Phone Number: +44 1224 795277 or +1 281 575 5000

www.halliburton.com

For further information, please contact

E-Mail address: fdunexchem@halliburton.com

Emergency telephone number

+44 1224 795277 or +1 281 575 5000

Emergency telephone §45 - (EC)1272/2008

Europe	112
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	Toxline: +47 22 591300
Poland	Poison Control and Information Centre, Warsaw (PL): +48 22 619 66 54; +48 22 619 08 97
Spain	Poison Information Service (ES): +34 91 562 04 20
United Kingdom	NHS Direct (UK): +44 0845 46 47

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Skin Corrosion / irritation	Category 2- H315
Serious Eye Damage / Eye Irritation	Category 2- H319
Specific Target Organ Toxicity - (Single Exposure)	Category 3- H335

2. HAZARDS IDENTIFICATION

Flammable liquids.

Category 3- H226

Classification according to EU Directives 67/548/EEC or 1999/45/EC*For the full text of the R-phrases mentioned in this Section, see Section 16***Classification** Xi - Irritant.**Risk Phrases**

R10 Flammable.

R36/37 Irritating to eyes and respiratory system.

Label Elements**Hazard Pictograms****Signal Word****Warning****Hazard Statements**

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H335 - May cause respiratory irritation

H226 - Flammable liquid and vapor

Contains**Substances**

Ester

CAS Number

Proprietary

Precautionary Statements - EU (§28, 1272/2008)

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
 P233 - Keep container tightly closed
 P240 - Ground/Bond container and receiving equipment
 P241 - Use explosion-proof electrical/ventilating/lighting/equipment
 P242 - Use only non-sparking tools
 P243 - Take precautionary measures against static discharge
 P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
 P264 - Wash face, hands and any exposed skin thoroughly after handling
 P271 - Use only outdoors or in a well-ventilated area
 P280 - Wear protective gloves/eye protection/face protection
 P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
 P332 + P313 - If skin irritation occurs: Get medical advice/attention
 P362 - Take off contaminated clothing and wash before reuse
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P337 + P313 - If eye irritation persists: Get medical advice/attention
 P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
 P312 - Call a POISON CENTER or doctor/physician if you feel unwell
 P370 + P 378 - In case of fire: Use CO₂, dry chemical, or foam

Other Hazards

None known

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	EINECS	CAS Number	PERCENT	EEC Classification	EU - CLP Substance Classification	REACH No.
Ester	Listed	Proprietary	60 - 100%	R10 Xi; R36/37	Eye Irrit. 2 (H319) STOT SE 3 (H335) Flam. Liq. 3 (H226)	No data available

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

4. FIRST AID MEASURES**Description of first aid measures****Inhalation**

If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes

Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

**Skin
Ingestion**

Wash with soap and water. Get medical attention if irritation persists.

Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

Most Important symptoms and effects, both acute and delayed

May cause eye and respiratory irritation. May cause headache, dizziness, and other central nervous system effects.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically

5. FIREFIGHTING MEASURES**Extinguishing media****Suitable Extinguishing Media**

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

Special hazards arising from the substance or mixture

Special Exposure Hazards

Decomposition in fire may produce toxic gases. Use water spray to cool fire exposed surfaces. Vapors are heavier than air and may accumulate in low areas. Vapors may travel along the ground to be ignited at distant locations. Avoid spraying water directly into storage containers due to danger of boilover.

Advice for firefighters**Special Protective Equipment for Fire-Fighters**

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment.

See Section 12 for additional information

Environmental precautions

Prevent from entering sewers, waterways, or low areas.

Methods and material for containment and cleaning up

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

Reference to other sections

See Section 12 for additional information.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse. Ground and bond containers when transferring from one container to another. Use only with local exhaust ventilation.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

Conditions for safe storage, including any incompatibilities

Store away from oxidizers. Keep from heat, sparks, and open flames. Keep container closed when not in use. Product has a shelf life of 12 months.

Specific End Use(s)**Exposure Scenario**

No information available

Other Guidelines

No information available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Substances	EU	UK OEL	Netherlands	France OEL	Germany MAK/TRK
Ester	Not applicable				

Substances	Italy	Poland	Hungary	Czech Republic	Denmark
Ester	Not applicable				

Derived No Effect Level (DNEL) No information available.

Predicted No Effect Concentration (PNEC) No information available.

Exposure controls**Engineering Controls**

Use in a well ventilated area.

Personal protective equipment**Respiratory Protection**

If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.

Organic vapor cartridge with particulate prefilter.

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	No information available

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

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

<u>Property</u>	<u>Values</u>
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<u>Remarks/ Method</u>	
pH:	No data available
Melting Point/Range	No data available
Freezing Point/Range (C):	-66°C
Boiling Point/Range	144.5°C
Flash Point	49°C
Closed cup	
lower flammability limit	2.2%
Evaporation rate	No data available
Vapor Pressure	6.97 mmHg
Vapor Density	3.6
Specific Gravity	1.085 - 1.098
Water Solubility	Miscible with water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	385°C
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

Other information

Molecular Weight	104.12
VOC Content (%)	No data available

10. STABILITY AND REACTIVITY

Reactivity

Not applicable

Chemical Stability

Stable

Possibility of Hazardous Reactions

Will Not Occur

Conditions to Avoid

Moisture

Incompatible Materials

Strong oxidizers.

Hazardous Decomposition Products

Carbon monoxide and carbon dioxide.

11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Acute Toxicity

Inhalation	May cause respiratory irritation.
Eye Contact	Causes severe eye irritation May cause permanent eye damage.
Skin Contact	May cause skin irritation.
Ingestion	Irritation of the mouth, throat, and stomach. In large amounts: May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions.

11. TOXICOLOGICAL INFORMATION

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 1% are chronic health hazards.

Substances	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ester	No data available	No data available	No data available

12. ECOLOGICAL INFORMATION

Toxicity

Ecotoxicity Effects

Substances	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Ester	No information available	No information available	No information available	No information available

Persistence and degradability

Readily biodegradable

Bioaccumulative potential

No information available

Mobility in soil

No information available

Results of PBT and vPvB assessment

No information available.

Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal Method

Contaminated Packaging

Disposal should be made in accordance with federal, state, and local regulations. Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

IMDG/IMO

UN Number: UN3272,
UN Proper Shipping Name: Esters, N.O.S.
Transport Hazard Class(es): , 3
Packing Group: , III
EMS: EmS F-E, S-D

RID

UN Number: UN3272,
UN Proper Shipping Name: Esters, N.O.S.
Transport Hazard Class(es): , 3
Packing Group: , III

14. TRANSPORT INFORMATION

ADR

UN Number: UN3272,
UN Proper Shipping Name: Esters, N.O.S.
Transport Hazard Class(es): , 3
Packing Group: , III

IATA/ICAO

UN Number: UN3272,
UN Proper Shipping Name: Esters, N.O.S.
Transport Hazard Class(es): , 3
Packing Group: , III

Special Precautions for User None
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

15. REGULATORY INFORMATION

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.

Chemical Safety Assessment

No information available

16. OTHER INFORMATION

Full text of R-phrases referred to under Sections 2 and 3

R10 Flammable.

R36/37 Irritating to eyes and respiratory system.

Key literature references and sources for data

www.ChemADVISOR.com/

Revision Date: 29-Nov-2010
Revision Note Not applicable

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer Statement

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16. OTHER INFORMATION

End of Safety Data Sheet