

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 10/12/2015

Reviewed on 10/12/2015

* 1 Identification

· **Product Identifier**

· **Trade name: NuFlo 27T**

· **Product Number:** ofc-ng27t

· **Relevant identified uses of the substance or mixture and uses advised against:**

· **Product Description** Ultra heavy crude viscosity reducer - flow enhancer - asphaltene & paraffin treatment

· **Details of the Supplier of the Safety Data Sheet:**

· **Manufacturer/Supplier:**

NuGenTec Oilfield Chemicals
1155 Park Avenue, Emeryville, CA 94608
ofcadmin@nugentec.com

www.nugentec.com/oilfield

888-996-8436 or 707-891-3012 for product information

· **Emergency telephone number:**

PERS Emergency Response: Domestic and Canada - 1-800-633-8253, International 1-801-629-0667

* 2 Hazard(s) Identification

· **Classification of the substance or mixture:**



GHS08 Health hazard

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

Flam. Liq. 4 H227 Combustible liquid.

· **Label elements:**

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms:**



GHS07



GHS08

· **Signal word:** Danger

· **Hazard-determining components of labeling:**

Heavy naphtha distillates

diethylene glycol monomethyl ether

Solvent naphtha (petroleum), medium aliph.

methylene dithiocyanate

(benzothiazol-2-ylthio)methyl thiocyanate

· **Hazard statements:**

Combustible liquid.

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- Causes skin irritation.
- Causes serious eye irritation.
- May cause an allergic skin reaction.
- Suspected of damaging fertility or the unborn child.
- May be fatal if swallowed and enters airways.

Precautionary statements:

- Keep away from flames and hot surfaces. – No smoking.
- Avoid breathing dust/fume/gas/mist/vapors/spray.
- Wear protective gloves / eye protection / face protection.
- Wear protective gloves.
- Wear eye protection / face protection.
- Wash thoroughly after handling.
- Contaminated work clothing must not be allowed out of the workplace.
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
- IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
- Wash contaminated clothing before reuse.
- IF exposed or concerned: Get medical advice/attention.
- If skin irritation occurs: Get medical advice/attention.
- If skin irritation or rash occurs: Get medical advice/attention.
- If eye irritation persists: Get medical advice/attention.
- Do NOT induce vomiting.
- In case of fire: Use for extinction: CO2, powder or water spray.
- IF ON SKIN: Wash with plenty of water.
- Take off contaminated clothing and wash it before reuse.
- Store locked up.
- Store in a well-ventilated place. Keep cool.
- Dispose of contents/container in accordance with local/regional/national/international regulations.

Classification system:

NFPA ratings (scale 0 - 4)



HMS-ratings (scale 0 - 4)



- Hazard(s) not otherwise classified (HNOC):** None known
- Results of PBT and vPvB assessment:** Not applicable.

*** 3 Composition/Information on Ingredients**

Heavy naphtha distillates	☠ Asp. Tox. 1, H304	25-50%
Solvent naphtha (petroleum), medium aliph.	🔥 Flam. Liq. 3, H226; ☠ Asp. Tox. 1, H304	25-50%
Trade Secret asphaltene flow enhancer	⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319	5-10%

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- **Chemical characterization: Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

Dangerous Components:

CAS: 111-77-3 RTECS: KL 6125000	diethylene glycol monomethyl ether ⚠ Repr. 2, H361; Flam. Liq. 4, H227	2-12%
	Trade Secret Asphaltene Dispersant ⚠ Skin Corr. 1B, H314; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Flam. Liq. 4, H227	≤ 2,5%
CAS: 6317-18-6 RTECS: XL 1560000	methylene dithiocyanate ⚠ Acute Tox. 3, H301; Acute Tox. 2, H330; ⚠ Skin Corr. 1B, H314; ⚠ Aquatic Acute 1, H400; ⚠ Skin Sens. 1, H317	≤ 2,5%
CAS: 21564-17-0	(benzothiazol-2-ylthio)methyl thiocyanate ⚠ Acute Tox. 2, H330; ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317	≤ 2,5%

* 4 First-Aid Measures

- **Description of first aid measures:**
- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation occurs, consult a doctor.
- **After eye contact:**
Rinse opened eye for at least 15 minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If swallowed and symptoms occur, consult a doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed:** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed:**
No further relevant information available.

* 5 Fire-Fighting Measures

- **Extinguishing media:**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture:**
Combustible liquid. Vapors can travel to a source of ignition and flash back.
Explosive mixtures may occur at temperatures at or above flashpoint.
- **Advice for firefighters:**
- **Protective equipment:**
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.

6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures:** Not required.
- **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (i.e. sand, diatomite, acid binders, universal binders, sawdust).

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- Dispose contaminated material as waste according to section 13.
- Ensure adequate ventilation.
- Dispose of the collected material according to regulations.
- **Reference to other sections:**
 - See Section 7 for information on safe handling.
 - See Section 8 for information on personal protection equipment.
 - See Section 13 for disposal information.

*** 7 Handling and Storage**

- **Handling**
- **Precautions for safe handling:**
 - Ensure good ventilation/exhaustion at the workplace.
 - Open and handle receptacle with care.
 - Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
 - Protect from heat.
 - Keep protective respiratory device available.
- **Conditions for safe storage, including any incompatibilities:**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Store in the original container.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
 - No further relevant information available..
 - Protect from heat and direct sunlight.
- **Specific end use(s):** No further relevant information available.

*** 8 Exposure Controls/Personal Protection**

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters:**

Components with occupational exposure limits:	
Trade Secret Asphaltene Dispersant	
PEL	Long-term value: 6 mg/m ³ , 3 ppm
REL	Short-term value: 15 mg/m ³ , 6 ppm Long-term value: 8 mg/m ³ , 3 ppm

- **Additional information:** The lists that were valid during the creation of this SDS were used as basis.
- **Exposure controls:**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
 - The usual precautionary measures for handling chemicals should be followed.
 - Keep away from foodstuffs, beverages and feed.
 - Immediately remove all soiled and contaminated clothing and wash before reuse.
 - Wash hands before breaks and at the end of work.
 - Store protective clothing separately.
 - Avoid contact with the eyes and skin.
- **Breathing equipment:** Not required.

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· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Select glove material based on penetration times, rates of diffusion and degradation.

· **Material of gloves:**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material:**

The exact break-through time has to be determined and observed by the manufacturer of the protective gloves.

· **Eye protection:**



Tightly sealed goggles

* 9 Physical and Chemical Properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Liquid
Color: Light yellow

· **Odor:** Vinegar

· **Odor threshold:** Not determined.

· **pH-value @ 20 °C (68 °F):** 7.5

· **Change in condition**

Melting point/Melting range: Not determined.

Boiling point/Boiling range: 153 °C (307 °F)

· **Flash point:** 70 °C (158 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 265 °C (509 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not self-igniting.

· **Danger of explosion:** Not determined.

· **Explosion limits:**

Lower: 0,6 Vol %

Upper: 6,5 Vol %

· **Vapor pressure @ 20 °C (68 °F):** 6,6 hPa (5 mm Hg)

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- **Density @ 20 °C (68 °F):** 0.866 g/cm³ (7.227 lbs/gal)
- **Relative density:** Not determined.
- **Vapor density:** Not determined.
- **Evaporation rate:** Not determined.
- **Solubility in / Miscibility with:**
 - Water:** Fully miscible.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
 - Dynamic @ 20 °C (68 °F):** 15 mPas
 - Kinematic:** Not determined.
- **Solvent content:**
 - Organic solvents:** 43.4 %
 - Water:** 0.5 %
 - VOC content:** 43.4 %
- **Solids content:** 0.1 %
- **Other information:** No further relevant information available.

*** 10 Stability and Reactivity**

- **Reactivity:** No further relevant information available.
- **Chemical stability:** Stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

*** 11 Toxicological Information**

- **Information on toxicological effects:**
- **Acute toxicity:**

LD/LC50 values that are relevant for classification:		
Heavy naphtha distillates		
Dermal	LD50	>2000 mg/kg (rabbit)
Solvent naphtha (petroleum), medium aliph.		
Oral	LD50	>6500 mg/kg (rat)
Dermal	LD50	>3000 mg/kg (rab)
Inhalative	LC50/4 h	>14 mg/l (rat)
	LC50/48 hrs	800 mg/l (daphnia)
111-77-3 diethylene glycol monomethyl ether		
Oral	LD50	5500 mg/kg (rat)
Dermal	LD50	6540 mg/kg (rabbit)
Trade Secret Asphaltene Dispersant		
Oral	LD50	2050 mg/kg (rat)
Dermal	LD50	1000 mg/kg (rabbit)

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- **Primary irritant effect:**
- **On the skin:**
Irritant to skin and mucous membranes.
May cause an allergic skin reaction.
- **On the eye:** Irritating effect.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

· **Carcinogenic categories:**

· IARC (International Agency for Research on Cancer):
None of the ingredients are listed.
· NTP (National Toxicology Program):
None of the ingredients are listed.
· OSHA-Ca (Occupational Safety & Health Administration):
None of the ingredients are listed.

*** 12 Ecological Information**

· **Toxicity:**

· Aquatic toxicity:
Heavy naphtha distillates
EC50 41 mg/l (Fathead Minnow)

- **Persistence and degradability:** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential:** No further relevant information available.
- **Mobility in soil:** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
- **Results of PBT and vPvB assessment:**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects:** No further relevant information available.

*** 13 Disposal Considerations**

- **Waste treatment methods:**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Observe all federal, state and local environmental regulations when disposing of this material.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

*** 14 Transport Information**

- **UN-Number:**
- **DOT, ADR, ADN, IMDG, IATA** Non-Regulated Material

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- **UN proper shipping name:**
- **DOT, ADR, ADN, IMDG, IATA** Non-Regulated Material
- **Transport hazard class(es):**
- **DOT, ADR, ADN, IMDG, IATA**
- **Class:** Non-Regulated Material
- **Packing group:**
- **DOT, ADR, IMDG, IATA** Non-Regulated Material
- **Environmental hazards:** Not applicable.
- **Special precautions for user:** Not applicable.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** Not applicable.
- **UN "Model Regulation":** Non-Regulated Material

* 15 Regulatory Information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture:**
- **SARA (Superfund Amendments and Reauthorization):**

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

111-77-3 diethylene glycol monomethyl ether

· **TSCA (Toxic Substances Control Act):**

	Heavy naphtha distillates
	Solvent naphtha (petroleum), medium aliph.
	Trade Secret asphaltene flow enhancer
111-77-3	diethylene glycol monomethyl ether
	Mixture of surfactants
	Trade Secret Asphaltene Dispersant
68909-18-2	Benzyl Alkyl Pridinyl Quaternary Ammonium Chloride
68391-01-5	C12-C18 alkyl benzyl dimethyl ammonium chloride
68956-79-6	n-Alkyl (68% C12, 32% C14) dimethyl ethylbenzyl ammonium chloride
6317-18-6	methylene dithiocyanate
64-17-5	Denatured Ethanol
7732-18-5	Water, distilled water, deionized water

· **California Proposition 65:**

· **Chemicals known to cause cancer:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

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· **Carcinogenic categories:**

· EPA (Environmental Protection Agency):	
None of the ingredients are listed.	

· **TLV (Threshold Limit Value established by ACGIH):**

64-17-5 Denatured Ethanol	A3
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· **NIOSH-Ca (National Institute for Occupational Safety and Health):**

None of the ingredients are listed.	
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· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms:**



GHS07 GHS08

· **Signal word:** Danger

· **Hazard-determining components of labeling:**

Heavy naphtha distillates
 diethylene glycol monomethyl ether
 Solvent naphtha (petroleum), medium aliph.
 methylene dithiocyanate
 (benzothiazol-2-ylthio)methyl thiocyanate

· **Hazard statements:**

Combustible liquid.
 Causes skin irritation.
 Causes serious eye irritation.
 May cause an allergic skin reaction.
 Suspected of damaging fertility or the unborn child.
 May be fatal if swallowed and enters airways.

· **Precautionary statements:**

Keep away from flames and hot surfaces. – No smoking.
 Avoid breathing dust/fume/gas/mist/vapors/spray.
 Wear protective gloves / eye protection / face protection.
 Wear protective gloves.
 Wear eye protection / face protection.
 Wash thoroughly after handling.
 Contaminated work clothing must not be allowed out of the workplace.
 Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
 Continue rinsing.
 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
 Wash contaminated clothing before reuse.
 IF exposed or concerned: Get medical advice/attention.
 If skin irritation occurs: Get medical advice/attention.
 If skin irritation or rash occurs: Get medical advice/attention.
 If eye irritation persists: Get medical advice/attention.
 Do NOT induce vomiting.

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In case of fire: Use for extinction: CO2, powder or water spray.
 IF ON SKIN: Wash with plenty of water.
 Take off contaminated clothing and wash it before reuse.
 Store locked up.
 Store in a well-ventilated place. Keep cool.
 Dispose of contents/container in accordance with local/regional/national/international regulations.

· National regulations:

The product is subject to be classified according with the latest version of the regulations on hazardous substances.

· State Right to Know:

	Heavy naphtha distillates ⚠ Asp. Tox. 1, H304	25-50%
	Solvent naphtha (petroleum), medium aliph. ⚠ Flam. Liq. 3, H226; ⚠ Asp. Tox. 1, H304	25-50%
	Trade Secret asphaltene flow enhancer ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319	5-10%
CAS: 111-77-3 RTECS: KL 6125000	diethylene glycol monomethyl ether ⚠ Repr. 2, H361; Flam. Liq. 4, H227	2-12%
	Non-Hazardous Coupling Agents	≤ 2,5%
	Mixture of surfactants ⚠ Acute Tox. 4, H302; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2A, H319	≤ 2,5%

All ingredients are listed.

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other Information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

· Date of preparation / last revision: 10/12/2015 / 2

· Abbreviations and acronyms:

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road
 ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 ACGIH: American Conference of Governmental Industrial Hygienists
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 NFPA: National Fire Protection Association (USA)
 HMIS: Hazardous Materials Identification System (USA)
 VOC: Volatile Organic Compounds (USA, EU)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 vPvB: very Persistent and very Bioaccumulative
 Flam. Liq. 4: Flammable liquids, Hazard Category 4
 Acute Tox. 3: Acute toxicity, Hazard Category 3
 Acute Tox. 4: Acute toxicity, Hazard Category 4
 Acute Tox. 2: Acute toxicity, Hazard Category 2
 Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
 Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

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Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
Repr. 2: Reproductive toxicity, Hazard Category 2
Asp. Tox. 1: Aspiration hazard, Hazard Category 1
Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1

· *** Data compared to the previous version altered.**

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