1 - Manufacturer and product identification

1.1 – Registered name: EDOFLUID WHS

1.2 - Manufacturer: STEELFLUID S.r.l.
Via Cecchi 9/6
16129-Genova - ITALY

1.3 - Telephone: +39010-540691

1.4 – E-amil address: steelfluid@steelfluid.it

1.5 – Emergency telephone number: +39010-540691

1.6 – Foreseen use: Special Fluid For Washing Hydraulic Sistems

1.7 – Date of drafting: 24/01/2007

2 - Chemical composition/Ingredients informations

Contains substances known to be hazardous to health or subject to exposure limitations according to directive no. 67/548/CEE and updates:

NAME	CAS	EINECS	%	RISK PHRASES	SYMBOLS
SARCOSINE ESTER	n.d.	n.d.	<0,4	R36/38-R50/53	Xi, N
HIGHLY REFINED TO SOLVENT, PARAFFINIC OIL	64741-88-4	265-090-8	> 90		

R36/38- Irritating to eyes and skin
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

The product contains, in few percentage, too: amine neutralized phosphorus- and sulphur-alkylesthers, no-corrosive agents and no-oxidizing agents dispersed in mineral oil.

Note L of Annex 1 applicable. DMSO extract concentration < 3% on weight, according the IP 346 measurement.
Note H applicable. Hazardous characteristics classed according to annex 1. Further classification volunteered for those hazards not listed.

3 - Risks identification

This product is classed hazardous. Classification: R52/53.

HEALTH RISKS: Under normal conditions, this product is not classed hazardous and it does not show any particular risk. It is reccomended to maintain a normal personal hygiene avoiding repated and prolonged contacts that may cause irritations and dermatitis.
ENVIRONMENTAL HAZARDS: The product is harmful to aquatic organismis, may cause long-term adverse effects in the aquatic environment.

4 - First aid procedure

4.1 - General measures
Contact a doctor in case of accident, giving all the information found on the label and in this specifications sheet. Please remember that any medicinal and medical equipment must be administered by medical personnel only. Please also remember that, in case of accident, first aid must be delivered by properly qualified personnel to avoid complications or damages to the casualty.

4.2 - If the product is inhaled
Available data does not show any special hazards from inhalation. In case of inhalation of heated product, administer first aid as follows:
- remove the casualty from the contaminated area to a warm, well-ventilated place. Remove all clothing that may hinder breathing (shirtneck, tie, belt, ecc.)
- if breathing is irregular or stops altogether practice mouth-to-mouth resuscitation or administer oxygen. Contact a doctor immediately (and/or call emergency services)

4.3 - Accidental contact with the eyes
Available data does not show any special hazards from accidental contact with the eyes. Rinse well with water in case the product comes into contact with the eyes. If irritation occurs, contact an ophthalmologist.

4.4 - Accidental contact with the skin
The available data does not show any specific risks. If the product accidentally comes into contact with the skin, wash well with soap and water.

4.5 - If the product is ingested
In case the product is accidentally ingested do not drink, **do not induce vomiting**, keep the casualty laying down and call a doctor immediately.

5 - Fire prevention

5.1 – Suitable measures to extinguish a fire
In case of fire or presence of the product in a fire, follow this procedure:
- the product is combustible, it may feed a fire and/or originate hazardous fumes.
- to extinguish the fire use foam, chemical powder, carbon dioxide, atomized water, sand

5.2 - Unsuitable fire extinguishing means
There are no particular contraindications to the use of any of the following: water, powder, foam, carbon dioxide, halon, sand.
Please do not use water jets; use them only to refresh the surfaces exposed to the fire.

5.3 – Risks from the final product, from the comustion products
In case of fire, the product may generate monoxide carbon (CO). Complete combustion of the product may generate water, carbon monoxides (TLV-TWA: 57 mg/m^3), nitrogen oxides (TLV-TWA: 90 mg/m^3), sulphur oxides (TV-TWA: 5,2 mg/m^3), other toxic gases and, in lower quantities, mineral salts.

5.4 - Protective equipment for the fire fighters
Equip the fire fighting personnel with the following:
- full flash barrier suit
- helmet with eye shield or shielded hood
- heat proof gloves
- heat proof shoes
- breathing apparatus or gas mask
- organic vapours and acid gas mask with filter for the risks described above, according to the fire type and place (if the fire occurs in an open or closed space), etc
- suitable fire protection equipment.

Use a self-breathing apparatus.

6 - Accidental spillage procedure

6.1 - Individual measures

In case of accidental spillage, use the following protective measures:

- protective goggles, eye shield, gloves, boots and aprons

6.2 - Environment protection

In case of accidental spillage:

- stop or intercept the spillage and proceed to contain and collect the product following the indications set out at item 6.3 below
- avoid or reduce product spillage in the ground and in the environment
- collect polluted water or soil in appropriate containers to send for proper waste disposal
- if the product has reached waterways or drainage systems, or has contaminated the ground or the vegetation, report to the authority in charge.
- keep away not authorzied people
- do not throw away in the sewage system

6.3 - Containing and collecting spillage

To contain and collect spillage, please follow the procedure below:

- use protective means described at item 6.1
- collect spillage in sealed containers
- contain and soak up the spillage with inert absorbent materials (soil, sand, sawdust...)

7 - Handling and storage

7.1 - Handling

When handling the product, use protective means according to item 8 of this specifications sheet and the following procedures:

- do not smoke, eat or drink when handling the product. Employ normal measures (gloves, etcetera). Do not breathe fumes.
- avoid the formation of oil fogs
- avoid direct contact with product
- do not handle where there may be the presence of fires

7.2 - Storage

Storage of product must follow the cautions set out below:

- keep in mind the chemical/physical properties of the product to avoid interaction with other products (see item 10 of the safety sheet)
- keep the containers sealed
- keep product away from strong oxidants. When working at thigh temperatures the area must be well-ventilated and personnel must wear suitable respiratory tract protection.

Suitable materials and coatings: carbon steel, stainless steel, polythene, polypropylene, polyester, Teflon.
Unsuitable materials and coatings: natural resins, butanol resin, EPDM, polystyrene.
Compatibility with plastics may vary, please check before using.
Normal containers for transport: tanker, tank lorry, drums, canisters.
All containers, including empties, must be stored in well-ventilated areas at a temperature between –5 °C and 50°C and with safety catch on.

The product contains MINERAL OIL; please observ the following charge/discharge and storage temperatures:
Charge/discharge temperature: from ambiental to 65 °C
Storage temperature: from ambiental to 65 °C

FURTHER WARNINGS: containers are still hazardous even when empty. Please continue to observe all precautions.

8 - Exposure control/individual protection

8.1 - General precautions
Use the product according to this specifications sheet, particularly with regards to item 7.1. Use protective means according to the following items 8.3, 8.4 and 8.5.
It is recommended ot employ mechanical ventilation systems when the product is kept in confined spaces, as well as when it is heated to temperatures above normal room temperature.
The Safety Data Sheet (SDS) contains information regarding the chemical nature of a dangerous substance or a preparation, and the possible negative effects it may cause.
IPM stands for Individual Protective Measure that must be employed whenever a “Residual Risk” is present. The “Residual Risk” pertains to working conditions, and it’s closely related to the conditions to be found in the workplace and to the organisation of the work itself.
The IPM references contained in the Safety Data Sheet may only be of an informative nature: therefore, they may not go beyond limitations arising from responsibility charges.
The EMPLOYER is fully in charge of choosing the IPM suitable and appropriate to the conditions of risk in the workplace.

8.2 - Concentration limits in biological and working environments
The product contains mineral paraffinic oil obtained from a petrolific fraction.
Oil fogs: TLV-TWA (ACGIH 2002): 5 mg/m^3.
Data relating to TLV values of the final product is not available.
In open circuit systems where contact with the product is possible, personnel must wear protective goggles, long-sleeved uniforms and waterproof gloves. Where the product concentration in air is above the limits set out in this paragraph, and where the plant type, the working practices and other means to limit exposure are not sufficient, suitable respiratory tract protection is necessary.
PERSONAL HYGIENE:
provide suitable washing facilities in the working environment. Change coveralls, clothes worn under the coveralls, and shoes, whenever they become soaked by the product. Protective clothing, usefully employed to minimize contact with the preparation, may be source of contamination if continued to wear after being soaked with the product.
WORKING PRACTICE:
Use and choice of protective wear is relative to the risks posed by the product, by working conditions and the processing methods. As minimal protection, it is generally recommended to use protective goggles, coveralls to protect the arms, legs and body. Each visitor to the area where product handling takes place must also wear protective goggles.
TO LIMIT EXPOSURE:
keep clean the workplace, follow good working practices and, when product is handled by operators with dry skin, or in cold places, follow the instructions set out in the item below.
Change protective gloves (made of PVC, polyethelene, neoprene- non hevea rubber) when wear, tear or contamination is present.
Where concentration of the product in air exceeds the limits set out in this paragraph, it is recommended to wear half-face filter mask to protect from inhalation overexposure. The filter used may vary according to the types and quantities of chemicals handled in the workplace.
SKIN PROTECTION:
personal cleanliness is the most effective of protections. Do not use abrasives or solvents. After work, it is recommended to use reconditioning creams to restore the lipidic layer in the skin, especially in case of dry skin sufferers and during the winter months. Humidity and low temperatures may cause grazes, making personnel more vulnerable to chemicals handled.

8.3 - Respiratory tract protection
When handling product at high temperatures, employ the following protection means:
- organic vapours gas mask with A2 class filter, only to use when O_2 concentration is > 17%

8.4 - Hands protection
When handling the product, protect the hands as follows:
- wear solvent and mineral oils resistant gloves

Good gloevs may be according to DIN/EN 374.

8.5 - Eye protection
When handling the product, protect the eyes as follows:
- wear protective wrap-around goggles

8.6 - Skin protection
When handling the product, protect the skin as follows:
- suitable protection equipment

8.7 – Personal hygiene
Avoid the contact with skin and eyes. Do not eat, drink or smok with dirty hands. Wash hands with water and soap.

9 - Chemical and physical characteristics

9.1 – Physical state (at 20 °C and at 101.3 kPa) : Clear liquid

9.2 - Odour: characteristic

9.3 - pH: N.A.

9.4 – Density at 15 °C: 0,87 kg/l

9.5 – Viscosity at 40 °C: 32,9 cSt

9.6 – Vapour pressure: < 0,0015 psi at 20 °C

9.7 - Other parametres:
Colour ASTM (ASTM D 1500): 1,5
Colour Gardner (ASTM D 1544) : 5,7
Viscosity at 50°C (ASTM D 445) : 22,1
Viscosity at 40 °C (ASTM D 7042): 32,9 cSt
Viscosity at 20 °C (ASTM D 7042): 88,6 cSt
Density at 15°C (ASTM D 7042) : 0,873 kg/l
Density at 20 °C (ASTM D 7042): 0,869 kg/l
Density at 40 °C (ASTM D 7042): 0,857 kg/l
Refractive index at 20 °C (ASTM D 1218): 1,480

N.B.: The data on this specifications sheet are average values, not specifications limits.

10 - Stability and reactivity

10.1 - Stability
The product must be considered:
- stable, but can become unstable under particular conditions (see items 10.2 and 10.3)

10.3 - Incompatible materials
Avoid contact with strong oxidants.
The product contains substances whom the contact wih strong bases (alkaline solutions) is to avoid.

10.4 - Dangerous decomposition materials
The product generates carbon monoxide by combustion (CO if incomplete combustion occurs), nitrogen- and sulphur oxides.
The available data does not show any dangerous decompostion products.

11 - Toxicity information

11.0 – Acute toxicity
No data available on the acute toxicity of the final product.

11.1 - Toxicity from inhalation
No data available on the toxicity of the product from inhalation.

11.2 - Toxicity from ingestion
No data is available on the toxicity of the final product from ingestion.
The following data are to relate to the component PARAFFINIC OIL, listed in section 2):
LD50: > 2000 mg/kg

11.3 - Toxicity from skin contact
No data is available on toxicity from skin contact of the final product.
The following data are to relate to the component PARAFFINIC OIL, listed in section 2):
LD50: > 2000 mg/kg

11.4 - Toxicity from eye contact
No data is available on toxicity from eye contact of the final product.

11.5 - Sensitisation effects
No data is available on sensitisation effetcts of the final product.

11.7 - Carcinogenic effects
No data is available on carcinogenic effects of the final product.
The PARAFFINIC OIL, listed in section 2), contains less than 3% of DMSO, according to the IP 346/92 measurement; so on, according to the criteria of the UE on classification and labelling of the dangerous substances, this product is classed as "not provoke cancer".

11.8 - Mutagenic/teratogenetic effects
No data is available on mutagenic/teratogenic effects of the final product.

12 - Environmental information

This product is not classed as Volatile Organic Compound, according with the 1999/13/EC Directive.

12.1 - Possible product toxicity
Follow good working practices when using the product, avoiding dispersion in the environment.
List of substances classed hazardous for the environment and relative classification:
<0,4% sarcosine ester
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

12.2 - Persistency and degrability
No data is available on the persistency of the preparation and of its components.
The following data are referred to the component PARAFFINIC OIL, listed in section 2):
The product is rarely biodegradable.

12.3 - Mobility
No data is available on the mobility of the final preparation and of its components

12.4 – Magnification potential
No data is available on the magnification potential of the preparation and of its components.

12.6 - Ecotoxicity
No data is available on the ecotoxicity of the final product.
The following data are referred to the componet ALKYLESTHERS, listed in secion 2):
Acute ittiotoxicity: LC50 = 1÷10 mg/l
Acute bacterial toxicity: EC50 > 100 mg/l
Daphnia acute toxicity: LC50 = 1÷10 mg/l
Warer risk class (WGK): 2, risk for waters (VwVws Annex 4).

13 - Waste disposal

13.1 - Disposal of the product or of its residues
The product as is must be classed as: **special hazardous waste.** Reclaim if possible. This product CAN NOT be disposed of in dumps and/or public drainage systems, canals, natural waterways or rivers. The product does not generate cinders, and may be burnt in properly fitted incinerator plants according to legislation in force. Product waste or contaminated waste must be classed, stored and sent to a good waste disposal plant according to national and regional by-laws. Handling and storage of waste by-products must be carried out according to procedures set out at items 6 and 7 of this specifications sheet.

13.2 - Container disposal
All containers, even when completely empty, must not be disposed of in the environment. The containers must be properly treated before sending to disposal plants. The containers still containing product residues must be classed, stored and sent to a suitable waste disposal plant according to national and regional by-laws.

13.3 – European Waste Catalogue Code
The product may be coded differently according to its use. It is not possible to supply general information. The product as it does not contain halogenated compounds.
The consumer must be aware the conditions of use may affect the waste code of the product after use. Please refer to directive number 2001/118/EC for waste coding.

14 - Information on transport

14.1 - Precautions
The product does not represent a hazard nor is subject to limitations and is not listed in the transport of dangerous goods of ONU (ECOSOC).

14.2 - Road transportation
The product does not represent a hazard nor is subject to limitations for road transportation.

14.3 - Rail transportation
The product does not represent a hazard nor is subject to limitations for rail transportation.

14.4 - Sea transportation
The product does not represent a hazard nor is subject to limitations for sea transportation.

14.5 - Air transportation
The product does not represent a hazard nor is subject to limitations for air transportation.

15 - Regulations

15.1 - Labels according to EU/67/548 provision and updating

R PHRASES: R52/53: Harful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S PHRASES: S61: Avoid release to the environment. Refer to special instructions/Safety data sheets

CONTAINS: SARCOSINE ESTER.

National Legislation : please refer to the following directives where applicable:
Presidential Decree no. 175/88 and updates
Presidential Decree no. 303/56 del 19/05/1956
Ministerial Circulars nos. 45 and 61
Legislative Decree no. 626/94 and updates

National legislation : Further directives in force:
- threshold limit values (TLV) and biological exposure indicator (BEI) ACGIH 1998.
- protection of personnel from exposure derived risks to chemical, physical and biological agents in working environment (law decree no. 212 of 30/07/1990) (published on : **Gazzetta Ufficiale Italiana** no. **181** of **04/08/1990)**
- working health and safety regulations (Presidential decree no. 303/56 of 19/03/1956) (published on : **Gazz. Uff. Suppl. Ordin.** no. **105** of **30/04/1956)**.
- Occupational disease regulations and prospects (Presidential decree no. 336 of 13/04/1994) (published on: **Gazzetta Ufficiale Italiana** no. **131** of **07/06/1994)**.
- Safety in work environment (legislative decree no. 626 of 19/09/94) (implementation of directives nos. 89/391CEE, 89/654/CEE, 89/655/CEE, 89/656/CEE, 90/269/CEE, 90/270/CEE, 90/394/CEE and 90/679/CEE, *93/88/CEE*, *97/42/CE* *e* *1999/38/CE* on improving the health and safety conditions of personnel *during* work) (published on: **Gazz. Uff. Suppl. Ordin.** no. **265** of **12/11/1994**)
- Significant accident risks (Severo bis) (legislative decree no. 334 of 17/08/1999) (implementation of directive 96/82/CE on significant accident risk control in relation to specific hazardous substances) (published on: **Gazz. Uff. Suppl. Ordin.** no. **228** of **28/09/1999**).
- Regulations on emissions (Ministerial decree of 12/7/90) (Guidelines for the containment of industrial plant emissions and fixed minimum emission values) (published on: **Gazz. Uff. Suppl. Ordin.** no. **176** of **30/07/1990**)
- Regulations on air pollution (Ministerial decree of 12/7/90- Guidelines for the containment of industrial plant emissions and fixed minimum emission values and of Presidential decree of 25/07/1991- published on: **Gazzetta Ufficiale Italiana** no. **175** of **27/07/1991**).
- Regulations on water conservation (law by decree no. 152 of 11/5/99) (Provisions on water protection from pollution and implementation of directive no. 91/271/CEE on urban waste treatment and of directive no. 91/676/CEE on water protection from pollution by nitrates agricultural origin) (published on: **Gazz. Uff. Suppl. Ordin.** no. **124** of **29/05/1999**).

- Regulations on hazardous waste disposal and transportation (legislative decree no. 22/97-Implementation of directives nos. 91/156/CEE on waste, 91/689/CEE on hazardous waste and 94/62/CE on packing and packing waste products- published on: **Gazz. Uff. Suppl. Ordin.** no. **38** of **15/02/1997** and legislative decree no. 389/97-Revisions and additions to the legislative decree of 5 febbraio 1997, no. 22, on waste products, hazardous waste, packing and packing waste products - published on: **Gazzetta Ufficiale Italiana** no. **261** of **08/11/1997**).
- ADR/RID Road transport regulations– ministerial decree of 4/9/1996- Implementation of directive no. 94/55/CE of the Council for closer legislation of Member States on hazardous goods road transportation (published on: **Gazz. Uff. Suppl. Ordin.** no. **282** of **02/12/1996**) and implementation thereof.
- Ministerial Circulars nos. 45 and 61.
- Consolidation Act on Classification, Packing and Labelling of hazardous goods (incl. acceptance of CE directives up to the XXII update): Ministerial decree 28/4/1997- implementation of Art. 37, commas 1 and 2, of the legislative decree of 3 February 1997, no. 52, on classification, packing and labelling of hazardous goods (published on: **Gazz. Uff. Suppl. Ordin.** no. **192** of **19/08/1997**).
- Regulations on classification, packing and labelling of hazardous goods (law by decree no. 285 of 16/07/1998- Implementation of Community Directives on classification, packing and labelling of hazardous goods, according to Article no. 38 of law no. 128, 24 April 1998) (published on: **Gazzetta Ufficiale Italiana** no. **191** of **18/08/1998**).
- Acceptance of XXIV update CE (Ministerial decree no. 175 of 07/07/1999- Provisions on classification, packing and labelling of hazardous goods in acceptance of Directive no. 98/73/CE) (published on:**Gazz. Uff. Suppl. Ordin.** no. **226** of **25/09/1999**).
- Regulations on drawing up of Safety Data Sheets (incl. acceptance of up to Directive CE 93/112) (Ministerial decree of 4/4/97-Implementation of Art. 25, commas 1 and 2, of legislative decree of 3 February 1997, no. 52, on classification, packing and labelling of hazardous goods, on safety data sheet information) (published on: **Gazzetta Ufficiale Italiana** no. **169** of **22/07/1997**).
- Acceptance of XXIV and XXV updates of CE (Ministerial decree no. 10/04/2000-Acceptance of Directives nos. 98/73/CE and 98/98/CE, respectively on the XXIV and XXV update to Directive no. 67/548/CEE) (published on: **Gazz. Uff. Suppl. Ordin.** no. **205** of **02/09/2000**).
- **CEE/CEEA/CE directive no. 45** of **31/05/1999**: European Parliament and Council Of Europe directive of 31 May, 1999, on harmonisation of legislation for all Member States on classification, packing and labelling of hazardous goods.
- **The substance has been registered according to Legislative Decree no. 65 of 14 March, 2003 (substituting the Ministerial Decree of 19/04/2000) with the following code: AUT-65.**
- **Ministerial Decree** dated **26/01/2001**-provisions on classification, packing and labelling of hazardous goods in acceptance of directive **2000/32/CE** (containing XXVI update to technical progress of directive no. 67/548/CEE).
- **Ministerial Decree** dated **11/04/2001-** acceptance of directive **2000/33/CE** with XXVII update to technical progress of directive no. 67/548/CEE, on classification, packing and labelling of hazardous goods.
- **European Union Directive** 2001/59/CE of 06/08/2001, with XXVIII update to technical progress of directive no. 67/548/CEE, on classification, packing and labelling of hazardous goods.
- **European Union Directive** 2001/58/CE of 27/07/2001, containing the second revision to include amendments to the directive 91/155/CE defining and fixing the information modalities relating to hazardous goods according to Art. 4 of directive no. 1999/45/CE.
- **Legislative Decree of 14 March, 2003, no.65** and **Legislative Decree** n.**260** of **28th July 2004**– implementation of Directives nos. 1999/45/CE and 2001/60/CE on classification, packing and labelling of hazardous goods.
- **Decree** of **16 January 2004, no. 44** – implementation of Directive no. 1999/13/CE on limitations of emissions by volatile organic compounds of some industrial activities, according to Art. 3, comma 2, of the Presidential Decree no. 203 of 24 May 1988.
- **Decree** of **28/02/2006** – Implementation of Directive 2004/74/CE, with the acceptance of XXIX update to the technical progress of Directive 67/548/CEE, concerning classification, packaging and labelling of dangerous substances.

15.2 - Sale and use limitations

There are no limitations on the sale and/or use of the components.

15.3 – Greater hazards

This product must not be enetered in the storage classification summation.

16 - Further information

Limitations of use: only for use in industrial manufacturing.

Safety data sheet distribution: the information contained herein must be made available to all those who handle the product.

HAZARD WARNINGS GLOSSARY
R36/38: Irritating to eyes and skin
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

All information on this specifications sheet is according to our knowledge and our experience of the product and must not be considered exhaustive. It relates to the product as per specifications. If mixed or combined with other products, please make sure this cannot result in new risks or dangers.
The consumer is not, in any case, exempt from observing the regulations in force, relating either to the administrative or regulatory use of the product, or to work hygiene and safety practices.
This specifications sheet was prepared using ESWIN, and the SINTALEX database.

For technical informations: Tel.: +39010-540691

Revision summary:
This safety data sheet has been revised at section/s: ALL.
A vertical bar (|) on the left margin indicates a new entry from the previous version. If a section is indicated but the bar is not present the text has been erased.

SHEET VERSION no.0 of 24/01/2007
This version pre-empts all preceding specifications sheets.

SHEET PRINTED ON 26/01/2007