MATERIAL SAFETY DATA SHEET

according to 91/155/EEC

SLE 01

Date: 04.10.2004	Internal nr.: 3375-01.eng.05	Replaces: 3375-01.eng.04

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY/MANUFACTURER

TRADE NAME	SLE 01
PRODUCT TYPE	Emulsion matrix, component in Titan 7000-series

Manufacturer	Dyno Nobel Sweden AB	**Supplier**	Dyno Nobel Sweden AB
Address	Gyttorp	**Address**	Gyttorp
Postal code – place	S-713 82 Nora	**Postal code – place**	S-713 82 Nora
Country	Sweden	**Country**	Sweden
Phone number	+46 587 850 00	**Phone number**	+46 587 850 00
Fax	+46 587 253 45	**Fax**	+46 587 253 45
		Emergency Phone	

2. COMPOSITION AND INFORMATION ON INGREDIENTS

No	Ingredient name	CAS-No	Cont.(weight%)	Id-letter /R-phrases
1.	Ammonium nitrate	6484-52-2	60-80	O; 9, 44
2.	Sodium nitrate	7631-99-4	5-15	O; 8
3.	Water	---	8-25	---
4.	Highly refined mineral oil (DMSO-extract<3%, IP 346)	Product delivered under trade name Process Oil D series (Statoil)	3-8	NC
5.	Emulsifier		0,5-5	NC

Symbol legend: T+=Very toxic, T=Toxic, Xn=Harmful, Xi=Irritant, E=Explosive, O=Oxidising, F+=Extremely flammable, F=Highly flammable, C=Corrosive, N=Dangerous for the environment, NC=No Classification req.'d

3. HAZARDS IDENTIFICATION

Health hazard:

- Produces poisonous nitrous gasses when heated to high temperatures/fire
- Produces ammonia vapour when exposed to alkaline substances such as soap, concrete or lye.

Fire/explosion hazard

- Oxidising. Explosive when mixed with flammable substances or if heated in a closed room.

4. FIRST AID MEASURES

General:

- If in doubt in any case, contact doctor.

Skin contact::

- Remove soiled clothing. Wash well with soap and water; rinse well.

Eye contact:

- Rinse immediately with excessive water for at least 15 minutes. Contact doctor if irritation persists.

Swallowing:

- Rinse mouth with excessive water and contact doctor.

Inhalation of gasses, especially from fire / overheating:
When product is ignited nitrous gasses and carbon monoxide may be released. The nitrous gass NO_2 is paricularly dangerous. NO_2 is a reddish brown gas which can cause respiratory trouble and in the worst case lung oedema resulting in fatality. Symptoms can manifest hours after exposure to the gas.
CO can result in headache, nausea, impaired vision and hearing, and in the worst case unconsciousness and death.

- Remove the person(s) in question from the area of exposure as soon as possible. Ensure anyone exposed is kept completely still. Contact doctor / hospital as soon as possible.
- Loss of consciousness: Loosen tight-fitting clothing, stabilise lateral position.
- Respiratory trouble: Provide oxygen (only by experienced/trained personnel), quickly transport to hospital.
- Respiratory failure: Artificial respiration.
- Cardiac arrest: Chest compressions.
- NOTE! Symptoms of lung oedema can manifest after 18-24 hours. (In rare circumstances has lung oedema been reported up to 48 hours after exposure). In the meantime, the exposed person(s) must be kept completely still and under observation.

5. FIRE-FIGHTING MEASURES

SLE 01 is flame resistant with limited flammability.

- Thermal decomposition, fire or heating the product to high temperatures will produce nitrous gasses which can cause lung oedema.
- Avoid inhalation of smoke resulting from fire / heating.
- Respiratory protective equipment is necessary.
- Product is oxidising.

Fire-fighting measures in immediate area and vicinity of SLE 01

- With all possible fire-fighting means (water, all available fire-extinguishing materials) prevent fires from reaching the product.
- If possible, remove the product itself (drive away but remain with the emulsion matrix) from fire-ridden area.

If fire in container or tank with SLE 01:

- Use excessive water to extinguish fire, to cool containers and to disperse steam. Use of foam, powders, CO_2 etc. has **no** affect. If product gives off oxygen during heating, fire cannot be extinguished by smothering.
- Containers in the vicinity of fire should be immediately removed or cooled with water until all fires are extinguished.
- If fire cannot be brought under control or prevented from heating/rupturing of SLE 01, evacuation of the area should be considered.
- Evacuation: Stop all traffic and evacuate the area around the fire to an adequately safe distance considering fire-produced gasses and the possibility of explosion.
- Post guards, warn everyone in the vicinity and immediately contact police and fire department.

6. ACCIDENTAL RELEASE MEASURES

- Spills should be removed / dug up, placed in suitable receptacles (containers, barrels and other such) and destroyed.
- Advise and instruct concerning destruction, contact producer / supplier
- Use necessary protective equipment, see point 8.

7. HANDLING AND STORAGE

The product must be stored in accordance with local and national regulations or directives / guidelines from authorities.

- Must not be transported or stored together with flammable substances.
- Store separately from food stuffs, natural stimulants and animal foods.
- Recommended storage temperature: from 10°C to 25°C.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Preventative measures:

General:

- Eye cleaning stations must be available at worksites.
- Avoid eating and drinking during work with SLE 01, smoking is forbidden.
- Soiled clothing should be changed.
- Wash hands before breaks and after work.
- Avoid touching skin and eyes.

Respiratory protective equipment:

- Not necessary during normal handling and use. If risk of nitrous gas formation, use mask with B filter (grey) or compressed air/fresh air mask

Hand protection:

- Use gloves which are suitable for the work.

Eye protection:

- Use safety glasses. Use a face guard when matrix temperature > 40°C.

Protective clothing:

- Use clothing which is appropriate for the work and which prevents skin contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical form:	High viscosity substance
Colour:	Golden brown, can be darker
Smell:	Faint oil smell
Density:	1,35 – 1,45kg/liter

10. STABILITY AND REACTIVITY

The emulsion matrix (SLE 01) reacts with the chemical gassing agent N-10 to produce nitrogen. This happens in a controlled process in the loading truck when loaded into bore holes.

Substances which must be avoided / not mixed with:
- Strong acids, nitrate, reducing agents and alkaline substances.

Health hazard decomposition products:
- NOx (nitrous gasses) and CO (carbon monoxide)
- Ammonia vapour when in contact with alkaline substances

11. TOXICOLOGICAL INFORMATION

Inhalation of nitrous gasses can cause lung oedema with a fatal effect. Symptoms may manifest shortly after exposure (1-2 days), see point. 2.

LD50 (oral, rat) >2000 mg/kg for all individual substances in the product:

12. ECOLOGICAL INFORMATION

None of the individual substances in the following HSE-data sheet are classified as environmentally hazardous.

Accidental releases of large quantities of pure ammonium nitrate can result in over fertilisation of seas and river systems. Ammonium nitrate in SLE 01 is bound in a high viscosity emulsion with good water resistance properties. Dissolution of nitrogen takes place over a relatively long time horizon.

13. DISPOSAL CONSIDERATIONS

Larger quantities should be treated as special waste. Take contact with producer.

Deposits must be in accordance with local, public or national regulations.

See also point 6: Accidental release measures.

14. TRANSPORT INFORMATION

Land transport ADR/RID:

Class:	5.1	Hazard label No.:	5.1
Packaging Group:	II	Hazard No.:	50
UN-No:	3375		
Propper shipping name:	AMMONIUM NITRATE EMULSION		

Sea transport IMDG:

Class:	5.1		
EmS:	F–H, S–Q	PG:	II
UN-No:	3375		
Propper shipping name:	AMMONIUM NITRATE EMULSION		

15. REGULATIONS

Trade name: SLE 01, component in Titan 7000-series

Hazard determinant components: Ammonium and Sodium nitrate

Hazard code and hazard description:

O Oxidising

Oxidising

Risk-phrases: R44 Risk of explosion if heated under confinement.

Safety-phrases: S41 In case of fire and/or explosion do not breathe fumes

Date: 04.10.2004	Internal nr.: 3375-01.eng.05	Replaces: 3375-01.eng.04

16. OTHER INFORMATION

Health hazardous decomposable products - nitrous gasses:

		Administrative norm (Norway)		
CAS – no.:	**Gas:**	**mg / m ^{3}**	**ppm**	**Hazard class / Anm.:**
10102-44-0	Nitrogen dioxside (nitrous gas)	3,6 (T)	2 (T)	T+; 26 – 34, (T) = ceiling value
10102-43-9	Nitrogen oxside (nitrous gas)	30	25	T+; 26 – 34
630-08-0	Carbon monoxside (CO)	29	25	F+, T; 61-12-23-48/23
7664-41-7	Ammonia (NH_3)	18	25	T , N; 10-23-34-50

Background information in this datasheet is taken from the producers HSE-data sheets on the individual substances.

Information in this document is accessible to everyone who handles the product.