

SAFETY MATERIAL DATASHEET

ANOLIT , ANOLIT LETT

Date: 04.11.2003	Internal no.: 082-01.nor.02	Replaces: 082-01.nor.01 (10.09.2002)
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General information

This product can only be delivered to users holding recognised certificate for explosive work which has valid purchase permission issued by police or sheriff

1. IDENTIFICATION OF PRODUCT AND COMPANY RESPONSIBLE

PRODUCT NAME	Anolit, Anolit LIGHT (blended with Poraver)
PRODUCT TYPE	Yellow explosive with powder consistence packed in plastic bags

Manufacturer	Dyno Nobel Europe
Address	Postbox 614
Postal Code / Town	3412 Lierstranda
Telephone no.	32 22 80 00
Fax no.	32 22 81 83
Emergency tel.no..	917 05 850

2. INFORMATION OF CHEMICAL COMBINATION

No	Name of ingredient	CAS-NR	Cons..(weight%)	Risk Class; R-setn.
1	Ammoniumnitrate	6484-52-2	92 - 96	O ; 8-9
2	Paraffinöl:		4 - 8	
	Either Fueloil Standard	68476-30-2		X _n ; 40
	or fuel paraffin (HT)	91770-15-9		X _n , N ; 10-65-51/53
	or Diesel oil	68334-30-5		X _n ,N;K3,Note N,40-65-66-51/53
3	Poraver	Unknown	0-90 volumn % in Anolit	IK

Symbols T+=Very toxic, T=toxic, C=caustic Xn=Harmful to health, Xi=Irritating, E=Explosiveoxidier, O=Oxidate, F+=Extremely flammable, F=Flammable, N=Harmful to environment, K=Cancer provoking, IK=Classification not obligated

3. IMPORTANT AT MOMENTS OF DANGER

SAFETY:

Danger of explosion is uncontrollable, explosion can cause much physical harm. impact, friction, abnormal heating, fire or other ignition can result in an explosion

Danger to health:

Prolonged or repeated contact to skin can result in skin cancer (Diesel).

If swallowed can harm lungs.

High concentrated material can irritate respiration.

Danger to environment

Large local release can result in harmful poisoning of water resources.

Explosive gasses:

With explosion gasses are released which can be harmful with inhaling.

NO, NO₂ og N₂O_x ("nitrogen gases") are colourless to brick-red gases which can result in difficulties in breathing and at the worst lung collapse resulting in death. Symptom may become apparent hours after inhaling of the gases.

CO ("carbonmonoxide") with inhaling result in headache, dizziness, disturbance in sight and hearing, and at worst unconsciousness and death.

CO₂ ("carbondioxide") is less dangerous but will as it needs oxygen, be suffocating

4. ACTIONS TO FIRST AID

General.

In all circumstances shall contact a doctor

Inhaling

- Bring the person immediately to fresh air.

Contact to skin

- Remove impure clothing. Wash thoroughly with soap and water; rinse thoroughly, very dry skin shall deal with by fatty soft cream. Contact a doctor with ongoing irritation. Do not wash skin with White Spirit or other such material.

Eye contact

- Rinse immediately with large quantity of water for at least 15 minutes. When disturbance in sight or ongoing irritation, contact a doctor.

Swallowing

- Very little action if in small amount with conscious persons : Give 1-2 glasses of milk immediately, water or 50-100 g food oil or cream, but never to a person who has fainted or has cramps. DO NOT provoke throwing up. Contact a doctor

Inhalation of explosive gasses (after explosion or with fire / explosion):

- Remove the person immediately from the explosion site. Try to keep him calm. Contact a doctor / hospital soonest possible.
- If unconscious: Loosen tight clothing, keep person stable lying down.

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- With difficulties in breathing: Give oxygen(only by experienced personell), speedy transport to hospital.
- If not breathing do respiration
- If heart stops: Use C P R.
- NB! Symptoms for lung collapse can be apparent after 18-24 hrs. (in rare occasions is it reported as lung collapse for 48 hrs after exposition). In the meantime the exposed person shall lie down in complete stillness and under observation

5. ACTIONS TO PUTTING OUT FIRES

Actions with fire around or near explosivs (fire has not ignited the explosives)

- By all possible means (water or all available extinguishing material) fight the fire to prevent it from reaching the explosives.
- If possible remove the explosives (drive the explosives by vehicle) from the area of fire

Fire in explosives:

- **Do not try to extinguish the fire, that can result in explosion! It is not possible to extinguish fire in explosives with any extinguishing material (foam, powder, CO2 or sand). All attempts increase the danger of explosion.**
- Stop all actions and evacuate the area into a safe distance and keep in mind possible explosion and explosive gases.
- Organize watch shifts, watch the neighbourhood.
- **Immediately contact police and fire brigade.**
- Fire and explosive gases must not be inhaled, se para. 3 og 4; Explosive gases

6. ACTIONS TO UNEXPECTED RELEASE

General actions to unexpected release:

- Rest of explosive material to be taken up by spark free material and put into approved marked packings.
- Prevent spreading of the product as it is revolvable in water and can pollute water , land and drainage.
- Use personal necessary protective clothing, se para. 8.
- In no cases shall the rest be thrown i garbage-, toilet gutter or dropped/sunk in water/sea.
- Rest of explosive material must be regarded as special waste and thus disposed, se para. 13.

Unexpected release, not detonated charge after explosion

See: Regulations re. explosives from 11.09.1999. 684/1999 Para 39.

7. HANDLING AND STORING

Special features and dangers

- Only qualified personell shall handle this product

Handling

Special reference to:

- Regulations re explosives from 11.09.1999. Chapter VIII Use. Sequence of paragraphs regarding handling and use of explosive.

Few points for safe handling // safety measures deliberating on fire, explosion and theft

Critical situation: Delivered from storage place --> **storage** of explosive for use

- storage place inaccessible for strangers or without guidance
- avoid impact shock and friction
- Protect the explosives from high temperatures
- Keep explosives far from the origin of heat, open fires or other imaginable items which can ignite.
- smoking prohibited
- Protect the explosives from moisture

Storage:

Special reference to:

- Regulations re explosives from 11.09.1999. Chapter VI.. Storage:

Storage:group/ -class 1.1 D

The product is hygroscopic and be kept in (storage place) dry , well ventilated storage. Recommended storage time 1year.

8. EXPONENT CONTROLL AND PERSONAL PROTECTIVE WEAR

Administrative norms (material ref. single components in finished product):

Ingredients name	CAS-nr.	Adm.norm	Adm.year
Fueloil Standard	68476-30-2	1,0 mg/m ³ ; damp	1996
Diesel; Gas oil - unspecified	68334-30-5	1,0 mg/m ³ ; damp	2001
Fuelparaffin (HT); kerosin-unspecified	91770-15-9	120,0 mg/m ³	1996

The mineral oils(e) are absorbed in the finished product / binded into the finished product Anolit and by normal use represents no danger.

Administrative norm of explosion gases, see para. 16, Other information.

Preventative actions

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General:

- Possibility of eye rinse shall be available at job site.
- Working place and working methods should be such that direct, long and intensive contact with the product be prevented.
- Do not eat nor drink while working with explosives, smoking prohibited.
- Working clothes shall be available for change
- Wash hand for breaks and when work is finished.
- Avoid touching skin and eyes

Breathing protection:

- With normal handling and use not necessary.
- With danger of inhalation and if difficulties in breathin occur: Use breathing protection filter P2.

Hand protection:

- Use gloves made from Nitril or PVC.

Eye protection:

- With mechanical loading; use tight protective goggles or face screen.

Protective clothing:

- Use working clothes which are intended for the work operation and which protect contact with skin.

9. PHYSICAL AND CHEMICAL CHARACTERISTIC

Outer features.

Appearances:	Porous corn; 0,5-2,5 mm
Color::	Yellow
Smell:	Mineral oil (diesel / paraffin)
Important:	See own technical information

Relevant safety data:

Flammable:	Very flammable, strong oxidization
Explosion danger:	With fire where the gas is closed inside and with mechanical impact
Density:	Anolit ca. 0,85 kg/dm ³ - Anolit Light ca. 0,40 kg/dm ³
ph-value:	4,5 to 5,5
Water-soluble:	Ammoniumnitrate; soluble. Main additives; insoluble in water
Important:	The product is hygroscopic and highly corrosive.

10. STABILITY AND REACTIVITY

Stability:

- The product has effective oxidisation and can decompose with rising temperature. With higher air pressure in closed room / tank danger of explosion increases. With 260 °C is a possibility of explosion. Avoid all kinds of impact and friction.
- With normal use and handling there is no danger of decomposing.

Reacts by:

- Acid, reduction material and heavy metal catalyses the terminal decomposition, finally flammable material speeds up the process.
- The product developes ammonia in basic environment
- Avoid contact with copper, zinc and related compounds

Dangerous reactions- / products:

- Nitrile gases, carbonmonoxide og ammonia, se para. 3 (state of health – explosive gases)

11. INFORMATION REGARDING STATE OF HEALTH

Alternative information of poison

- Ammoniumnitrat, LD50 (laboratory test) : > 2000 mg/kg

General:

- The combination is under normal use and handling not much danger to health.. Swallowing and inhaling the product of large quantity can then result in serious lung damage and poisoning

Inhalation:

- Inhalation of small quantity can be irritating. Extended effect or higher consentration can result in respiratory infection, headache and dizziness

Skin contact:

- Can be irritating with repeated or over alonger time and eventually result in cracked skin.
- Langvarig eller gjentatt hudkontakt med Diesel kan forårsake kreft.

Eye contact:

- Material is very irritating for the eye.

Swallowing:

- Presumably unlikely, but will bring about reaction in the mucous membrane with danger of spontanious sever. pain vomit and diarrhea.

12. INFORMATION OF ENVIRONMENTAL RISK

Mobility:

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- The largest part of the product (ammoniumnitrate) is soluble / and blends with water.
- Mineral oils are not soluble in water, can penetrate the earth and pollute water. It evaporates with moderate speed and mixes with the atmosphere

Break down:

- Ammoniumnitrate can easily break down.
- Mineral oils are partly biological breakable and will be partly in the environment

Accumulation:

- Ammoniumnitrate does not accumulate.
- Mineral oils may bio-accumulate.

Ecolog toxicity:

- Fuelparaffin / diesel; $1 < LC/EC \text{ (vannorg.)} \leq 10$. Poisonous for organism living in water, can cause long-term effect in the water environment.
- Ammoniumnitrate (as fertilizer can contribute to poisoning organism living in water with larger, release locally).

13. REMOVAL OF CHEMICAL SPILLS

Rest of explosive material , explosive material infected and packing must be removed, to be gathered together (possible repack in approved packings), stock for short periode and as soon as possible to be destroyed in safe way.

Please note Regulations re. explosives from 11.09.1999. 684/1999 Para 39.

14. INFORMATION ON TRANSPORTATION

Transport on land ADR/RID:

Class:	1
Classification code :	1.1 D
UN-Nr.:	0082
Packing decisions:	P 116
Approval (technical name):	Sprengstoff, Type B
Proper shipping name:	Explosive, Blasting, Type B

Transport on sea IMDG:

Class:	1
Classification code:	1.1 D
Packing decisions:	P 116
EmS-Nr.:	F-B, S-Y

Transport by air:

Forbidden

15. INFORMATION OF LAW AND REGULATIONS

Products name: ANOLIT, ANOLIT LETT

Dangerous components: Ammoniumnitrate and Diesel / Fuelparaffin / Fuel oil (4-8%)

Danger code and danger signs:



EKSPLOSIV



HELSESKADELIG

Text for danger

R2 Explosive dangerous by impact, friction, fire or other flammable items
 R36/37/38 Irritates the eyes, respiration and skin
 R40 Possible danger of cancer
 R 52/53 Poisonous for organism living in water; can cause lonng-term effect in the water environment.

Text for safety

S35 Product and packings shall be made harmless in a safe manner
 S36/37 Use appropriate protective clothes and gloves
 S41 Avoid inhaling the smoke which occurs by fire or explosion
 S45 With mishap or similar occurances is immediate attention of doctor necessary; show SMD if possible
 S57 Store in a way that it can be kept safely from the environment (Take good care of strong appropriate packing to avoid pollution for the environment.

National law and regulation:

- Law from 25. March 1998 nr 16. 1998 about Weapons and Explosives. Regulation from 11. October 1999 nr. 684/1999 Regulations about explosives.
- ADR-/RID Road-/rail transport of dangerous goods 27. December 2000. Nr. 984/2000.

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16. OTHER INFORMATION

Text for danger (fra para. 2):

- R 8: Flammable in contact with flammable materials
 R 9: Danger of explosion in contact with flammable materials
 R 10: Flammable
 R 40: Possible danger of permanent health injury
 R 65: Dangerous: Can cause lung injuries if swallowed
 R 66: Repeated exposure can cause dry or cracked skin
 R 51/53: Poisonous for organism living in water; can cause long-term effect in the water environment.

When blasting values for the explosive gas:

CAS – nr.:	Explosive gas:	Administrative norm		danger class:
		mg / m ³	ppm	
10102-44-0	Nitrogen dioxide (NO ₂)	3,6 (T)	2 (T)	T+; 26 – 34
10102-43-9	Nitrogen monoxide (NO)	30	25	T+; 26 – 34
630-08-0	Carbon monoxide (CO)	29	25	F+, T; 61-12-23-48/23
124-38-9	Carbon dioxide (CO ₂)	9000	5000	---

This Material Data Safety Sheet is built on information given in Safety Material Datasheet from subcontractors / manufactureres for individual components in the fully produced product.

Information in this document shall be available to all who handle the product.