

SAFETY DATA SHEET
ACCORDING TO Regulation (EC) No. 1907/2006**Date of Issue:** 18.2.2000
Version: 5.1
Revision Date: 23.11.2016**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1 Product identifier**Product name: **OSTRAVIT C – permitted explosive****1.2 Relevant identified uses of the substance or mixture and uses advised against**

Explosive for blasting operations. Do not use for other purposes.

1.3 Details of the supplier of the safety data sheet

Explosia a.s.	tel.:	+420 466 825 202
530 02 Pardubice - Semtin	fax:	+420 466 822 941
Czech Republic	e-mail:	sds@explosia.cz

1.4 Emergency telephone number

Producer:

tel.:	+420 466 824 402
fax:	+420 466 824 448

National advisory body:

Toxicological Information Centre (TIS): Hospital for Occupational Diseases, Na Bojišti 1171/1, 128 21 Prague 2, tel. 224 919 293, 224 915 402 or 224 914 575

SECTION 2: HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture****2.1.1 Classification according to Regulation (EC) No 1272/2008**

Expl. 1.1; H 201
Acute.Tox.1;H310
Acute.Tox.2;H300
Acute.Tox.3; H331
STOT RE 2; H373
Eye Irrit.2; H319
Aquatic Chronic 3; H412

2.1.2 Classification according to Directive 67/548/EHS or 1999/45/ES

Explosive; E; R2.
Very toxic; T+; R26/27/28-33
Dangerous for the environment; R52/53.

2.1.3 Additional information

For full text of R-phrases and Hazard- and EU Hazard statements see section 16.

2.2 Label elements**Hazard pictograms:****Signal word:**

Danger.

Components of mixture for introducing on label:

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Hazard statements:

H201 Explosive; mass explosion hazard.

Precautionary statements:

P501 Dispose of contents/container to national regulations for disposal of explosives.

Additional information on label:

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Note:

Directive 1272/2008 stipulates in Annex 1, Art. 1.3.5 that explosives placed on the market with a view to obtaining an explosive or pyrotechnic effect shall be labelled and packaged in accordance with the requirements for explosives only, therefore the manufacturer marks the product on the basis of recommendations of the National Advisory Body with elements used for explosibility.

2.3 Other hazards

The product does not meet the criteria for PBT, vPvB.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS
Description of the mixture:

Mixture of sodium nitrate, ethyleneglycol dinitrate, glycerol trinitrate, ammonium chloride, nitrocellulose and other components not classified as dangerous.

Hazardous ingredients:

Identification name	CAS No ES No Index No Registration No	Content %	Classification according to 67/548/EEC	Classification according to (ES) 1272/2008 (CLP)
Sodium nitrate	7631-99-4 231-554-3 - 01-2119488221-41-XXXX	cca 47.0	O; R8 Xi; R36	Ox. Sol.3; H272 Eye Irrit.2; H319
Ammonium chloride	12125-02-9 235-186-4 017-014-00-8 01-2119487950-27-XXXX	cca 34.0	Xn; R 22 Xi; R 36	Acute Tox. 4; H302 Eye Irrit. 2; H319
Ethyleneglycol dinitrate	628-96-6 211-063-0 603-032-00-9 01-2119492860-31-XXXX	cca 7.5	E; R2 T+; R26/27/28-33	Unst. Expl.; H200 Acute Tox. 1; H310 Acute Tox. 2, H300+H330 STOT RE 2; H373
Glycerol trinitrate	55-63-0 2000-240-8 603-034-00-X 01-2119488893-18-XXXX	cca 3.5	E; R3 T+; R26/27/28 R33 N; R51-53	Unst. Expl., H200 Acute Tox. 1, H310 Acute Tox. 2, H300+H330 STOT RE 2, H373 Aquatic Chronic 2, H411
Nitrocellulose	9004-70-0 - 603-037-00-6 -	cca 0.15	E; R3	Expl. 1.1; H201

For full text of R-phrases and Hazard- and EU Hazard statements see section 16.

SECTION 4: FIRST AID MEASURES
4.1 Description of first aid measures
General notes:

In all cases keep the victim at physical and psychic rest and keep warm. Never give anything to an unconscious person. In heavy cases, always after contact with eyes and if swallowed, seek medical advice.

Following inhalation:

Break off the exposition. Move the victim to fresh air (not on the sun). If not breathing, give artificial respiration.

Following skin contact:

Remove contaminated clothing. Wash affected area with water and soap and use skin protective cream.

Following eye contact:

Rinse with water for at least 15 minutes. Move to the physician, while continue rinsing.

Following ingestion:

Rinse mouth with fresh water, give to drink some 0.2-0.3 l water containing active carbon (e.g. 5 tbs Carbsorb) and within not more than one hour induce vomiting (meaningless if induced later). Give active carbon repeatedly, no matter if the vomiting was induced or not. Seek medical advice. Do not induce vomiting in case of unconsciousness, convulsions or bad physical conditions.

4.2 Most important symptoms and effects, both acute and delayed

The mixture causes headaches, nausea, cyanosis, in heavy cases of intoxication unconsciousness or even death.

4.3 Indication of any immediate medical attention and special treatment needed

No data.

SECTION 5: FIREFIGHTING MEASURES**5.1 Extinguishing media**

Suitable extinguishing media: water spray. Adapt extinguishing media to the kind of fire.

Unsuitable extinguishing media: powders.

5.2 Special hazards arising from the substance or mixture

In case of burning: extreme danger of explosion. Try to prevent the spread of fire. If there is a danger of affecting the product by fire do not extinguish. Warn surroundings of danger of explosion and evacuate immediately to a safe distance.

In case of burning, toxic and irritant gases are formed.

5.3 Advice for fire-fighters

Self-contained breathing apparatus and protective clothing conforming to EN 469.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Avoid the free movement of persons in contaminated area. Wear personal protective equipment. Avoid spreading of the product. Avoid contact of spilled material with open fire, electric sparks and aggressive chemical compounds.

6.2 Environmental precautions

Avoid discharge to surface- and groundwater. If it is not possible, inform police and fire-fighters.

6.3 Methods and material for containment and cleaning up

Sweep up spilled material and place in impermeable packages. Flush spill area with plenty of water. Dispose by explosion only in the place approved for disposal of explosives in accordance with national regulations relating to explosives.

6.4 Reference to other sections

More detailed disposal instructions see section 13, personal protective equipment see section 8.

SECTION 7: HANDLING AND STORAGE**7.1 Precautions for safe handling**

Handle in accordance with regulations relating to explosives. Keep away from open flame, heat, do not eat, drink or smoke. Maximum care should be taken during handling (lifting, transferring, opening of containers) and transportation. Keep away from combustible material. Take precautionary measures against static discharges. Observe personal hygiene measures. Wear suitable protective clothing and gloves. Wash with water and soap thoroughly after handling. Ensure drink water for the first-aid.

7.2 Conditions for safe storage, including any incompatibilities

Store according to national regulations relating to explosives.

Maximum relative humidity 90 %. Recommended storage temperature -20 to +30 °C.

7.3 Specific end use(s)

Blasting operations. Observe safety regulations for processing of explosives.
To be used within 9 months after manufacturing.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Exposition limits according to Czech government statute No. 361/2007 Sb. in actual version

Substance / State	Long term mg/m ³	Short term mg/m ³
Glycerol trinitrate / Czech republic	PEL: 0.5	NPK-P: 1.0
Ethyleneglycol dinitrate / Czech republic	PEL: 0.5	NPK-P: 1.0
Ammonium chloride (fumes) / Czech republic	PEL: 5	NPK-P: 10

8.1.2 Monitoring procedures

To ensure observance of Czech government statute 361/2007 Sb. and to observe obligations included.

8.1.3 Biological limit values

Not determined in Czech Republic and European Union.

8.1.4 DNEL and PNEC values

Ammonium nitrate								CAS 6484-52-2
DNEL								
Users	Route of study		Effects		Time of exposure	Value		
Workers	Inhalation		Systemic effects		Long-term	37.6 mg/m ³		
Workers	Dermal		Systemic effects		Long-term	21.3 mg/kg/den		
General population	Inhalation		Systemic effects		Long-term	11.1 mg/m ³		
General population	Dermal		Systemic effects		Long-term	12.8 mg/kg/den		
General population	Oral		Systemic effects		Long-term	12.8 mg/kg/den		
PNEC								
Freshwater	Marine water	Intermittent releases	STP	Sediment (freshwater)	Sediment (marine water)	Soil	Secondary poisoning	
0.45 mg/l	0.045 mg/l	4.5 mg/l	18 mg/l	not available	not available	not available	No potential	

Ethyleneglycol dinitrate								CAS 628-96-6
DNEL								
Users	Route of study		Effects		Time of exposure	Hodnota		
Workers	Inhalation		Systemic effects		Long-term	0.085 mg/m ³		
Workers	Dermal		Systemic effects		Long-term	0.06 mg/kg/day		
General population	Inhalation		Systemic effects		Long-term	0.043 mg/m ³		
General population	Oral		Systemic effects		Long-term	0.015 mg/kg/day		
General population	Oral		Systemic effects		Acute/short term	0.015 mg/kg/day		
PNEC								
Freshwater	Marine water	Intermittent releases	STP	Sediment (freshwater)	Sediment (marine water)	Soil		
0.003 mg/l	0.0003 mg/l	0.019 mg/l	1.3 mg/l	0.004 mg/kg	0.0004 mg/kg	0.0025 mg/kg		

Glycerol trinitrate								CAS 55-63-0
DNEL								
Users	Route of study		Effects		Time of exposure	Value		
Workers	Dermal		Systemic effects		Long-term	0.5 mg/kg/day		
Workers	Dermal		Systemic effects		Acute/short term	2.5 mg/kg/day		
General population	Oral		Systemic effects		Long-term	0.5 mg/kg/day		
PNEC								
Freshwater	Marine water	Intermittent releases	STP	Sediment (freshwater)	Sediment (marine water)	Soil	Secondary poisoning	
0.0198 mg/l	not available	0.0198 mg/l	not available	not available	not available	not available	No potential	

Ammonium chloride			CAS 12125-02-9				
DNEL							
Users	Route of study	Effects	Time of exposure	Hodnota			
Workers	Inhalation	Systemic effects	Long-term	43.97 mg/m ³			
Workers	Dermal	Systemic effects	Long-term	128.9 mg/kg			
General population	Inhalation	Systemic effects	Long-term	9.4 mg/m ³			
General population	Dermal	Systemic effects	Long-term	55.2 mg/kg			
General population	Oral	Systemic effects	Long-term	55.2 mg/kg			
PNEC							
Freshwater	Marine water	Intermittent releases	STP	Sediment (freshwater)	Sediment (marine water)	Soil	Secondary poisoning
0.25 mg/l	0.025 mg/l	0.43 mg/l	13.1 mg/l	0.9 mg/kg	0.09 mg/kg	50.7 mg/kg	-

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Process enclosures, local exhaust, general ventilation.

8.2.2 Personal protective equipment

Protective clothing shall be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. All used personal protective equipment should conform Regulation 89/686/EEC.

Eye and face protection - chemical goggles;

Skin protection - protective gloves depending on operation conforming EN 374, protective clothing, boots, cap;

Respiratory protection – in case of fumes discharge use respiratory protection mask with filter A2 conforming EN 133.

8.2.3 Environmental exposure controls

Avoid release to the environment. If it is impossible, substance should be removed safely from the place of leakage. In case of leakage of substance to air or water sources, soil or sewer system, inform relevant authorities about leakage.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:	plastic material of green colour
Odour:	characteristic odour of nitroesters
Odour threshold:	not available
pH :	not available
Melting point/freezing point:	not applicable
Initial boiling point and boiling range:	not applicable
Flash point:	not applicable
Evaporation rate:	not applicable
Flammability:	not applicable - explosive
Upper flammability or explosive limits:	not applicable
Lower flammability or explosive limits:	not applicable
Vapour pressure:	not applicable
Vapour density:	not applicable
Relative density:	not available
Solubility:	partly soluble in water
Partition coefficient: n-octanol/water:	not available
Auto-ignition temperature:	not applicable - explosive
Decomposition temperature:	not applicable
Viscosity:	not applicable
Explosive properties:	Expl. 1.1
Oxidising properties:	not applicable – explosive

9.2 Other information

Flash point: > 300 °C.

Bulk density: 1.05 g/cm³.
Impact sensitivity: min. 4 J.
Lower sensitivity to friction, electric spark, high detonation initiation sensitivity.
Soluble in acetone, ethylacetate, partly soluble in benzene and toluene.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Explosive.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Unknown.

10.4 Conditions to avoid

High temperature, strong impact, friction, direct sun light.

10.5 Incompatible materials

Strong acids and alkalis.

10.6 Hazardous decomposition products

Oxides of nitrogen and carbon.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:	Fatal if swallowed (category 2), in contact with skin (category 1) or if inhaled (category 3).
	Glycerol trinitrate LD ₅₀ : 685 mg.kg ⁻¹ , rat, oral
	Glycerol trinitrate LD ₅₀ : >9 mg.kg ⁻¹ , rat, dermal
	Ethyleneglycol dinitrate LD ₅₀ : 616 mg.kg ⁻¹ , rat, oral
	Ammonium chloride LD ₅₀ : 1410 mg.kg ⁻¹ , rat, oral
	Sodium nitrate LD ₅₀ : 3236 mg.kg ⁻¹ , rat, oral
	Nitrocellulose LD ₅₀ : >5000 mg.kg ⁻¹ , rat, oral
Skin corrosion/irritation:	not containing these substances (or less than classification limit)
Serious eye damage/irritation:	Causes serious eye irritation. Eye Irrit. 2; H319
Respiratory or skin sensitisation:	not containing these substances (or less than classification limit)
Germ cell mutagenicity:	not containing these substances (or less than classification limit)
Carcinogenicity:	not containing these substances (or less than classification limit)
Reproductive toxicity:	not containing these substances (or less than classification limit)
STOT-single exposure:	not containing these substances (or less than classification limit)
STOT-repeated exposure:	May cause damage to organs through prolonged or repeated exposure. STOT RE 2; H373
Aspiration hazard :	not containing these substances (or less than classification limit)

11.2 Likely routes of exposure

Through inhalation, skin exposure and ingestion.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Harmful to aquatic life with long lasting effects.

Glycerol trinitrate	LC ₅₀ for fish: 3.48 mg.l ⁻¹
Glycerol trinitrate	LC ₅₀ for invertebrates: 17,83 mg.l ⁻¹ (48 h)
Glycerol trinitrate	EC ₅₀ for algae: 1,15 mg.l ⁻¹ (96 h)
Ethyleneglycol dinitrate	LC ₅₀ for fish: 1.9 mg.l ⁻¹
Sodium nitrate	LC ₅₀ for fish: 6000 mg.l ⁻¹
Ammonium chloride	LC ₅₀ for fish: 42.91 mg.l ⁻¹

12.2 Persistence and degradability

Not established.

12.3 Bioaccumulative potential

Not established.

12.4. Mobility in soil

Solubility of ethyleneglycol dinitrate and glycerol trinitrate in water is relatively low (5 – 6.8 g/l respectively 1.4 g/l). Nitrocellulose is practically insoluble in water.

12.5 Results of PBT and vPvB assessment

Assessment was not carried out.

12.6 Other adverse effects

Lack of data.

SECTION 13: DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods**

Substance/mixture: Sweep up spilled material carefully and place in impermeable packages. Flush spill area with plenty of water. Dispose by explosion only in the place approved for disposal of explosives in accordance with national regulations relating to explosives.

Packaging: Packaging without the rest of product must be incinerated only in a hazardous waste incinerator facility under observation of official regulations.

Waste codes / waste designations according to EWC:

16 04 03 N Other waste explosives

SECTION 14: TRANSPORT INFORMATION

14.1 UN number:	0081
14.2 UN proper shipping name:	EXPLOSIVE, BLASTING, TYPE A
14.3 Transport hazard class:	1
14.4 Packing group:	
14.5 Environmental hazards:	no
14.6 Special precautions for user:	no
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:	not applicable
14.8 Other applicable information:	
- for ADR/RID	
Classification code:	1.1D
Label:	1
- for IMDG	
EmS	F-B, S-Y
- for IATA	Air transport is forbidden

SECTION 15: REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****EU Regulations:**

Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), in the wording of later regulations

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP), in the wording of later regulations

Dangerous Substances Directive 67/548/EHS

Dangerous Preparations Directive 1999/45/ES

European Waste Catalogue (EWC)

15.2 Chemical safety assessment

Assessment was not carried out.

SECTION 16: OTHER INFORMATION

Changes to the previous version:

Version 5.0 – Product classified in accordance with Regulation no. 1272/2008/EC.

Version 5.1 – 7.3 Specific end use(s)

Abbreviations:

CAS	Chemical Abstracts Service
EN	European standard
EWC	The European Waste Catalogue
PEL	Permissible Exposure Limit, long-term limit (8 hours)
NPK-P	Maximum allowable concentrations of chemicals in the workplace atmosphere, short-term limit
CLP	Regulation No. 1272/2008/EC
REACH	Regulation No. 1907/2006/EC
PBT	Persistent, bioaccumulative and toxic
vPvB	very persistent and very bioaccumulative
ADR	The European Agreement concerning the International Carriage of Dangerous Goods by Road
RID	Regulations concerning the International Transport of Dangerous Goods by Rail
IMDG	The International Maritime Dangerous Goods
IATA	The International Air Transport Association

Full text of data used for classification:

Acute Tox. 1	Acute toxicity, Category 1
Acute Tox. 2	Acute toxicity, Category 2
Acute Tox. 3	Acute toxicity, Category 3
Acute Tox. 4	Acute toxicity, Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment chronic, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment chronic, Category 3
Expl. 1.1	Explosive, Division 1.1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Ox. Sol. 3	Oxidising solid, Category 3
STOT RE 2	Specific target organ toxicity — repeated exposure, Category 2
Unst. Expl.	Unstable Explosive

H200	Unstable explosives.
H201	Explosive; mass explosion hazard.
H272	May intensify fire; oxidiser.
H300	Fatal if swallowed.
H302	Harmful if swallowed.
H310	Fatal in contact with skin.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H373	May cause damage to organs.
H300 + H330	Fatal if swallowed or if inhaled
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

E	Explosive
N	Dangerous for the environment
O	Oxidising.
T+	Very toxic
Xn	Harmful
Xi	Irritating

R2	Risk of explosion by shock, friction, fire or other sources of ignition
R3	Extreme risk of explosion by shock, friction, fire or other sources of ignition
R8	Contact with combustible material may cause fire
R22	Harmful if swallowed
R26/27/28	Very toxic by inhalation, in contact with skin and if swallowed
R33	Danger of cumulative effects
R36	Irritating to eyes
R51/53	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

Key literature references and sources for data

legislation, chemical databases and tables

Relevant data for classification

The mixture is classified on the basis of the conventional calculation method.

Instructions for training

For handling with the product Safety Regulations shall be elaborated, negotiated with Regional Hygienist. These Regulations shall be available in the workplace. Training by competent person only.

The information provided in this Safety Data Sheet is based on the present state of our knowledge and experience and are intended to describe our product with respect to possible safety demands. The information is not to be considered a warranty of quality specification. Recipients of our product must take responsibility for observing existing laws and regulations.