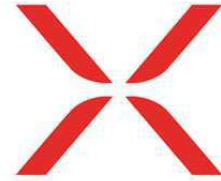


SAFETY DATA SHEET

(in accordance with Regulation (EU) No 453/2010)



RIOPRIME 25

Version: 1
Revision date: 15/12/2015

Page 1 of 10
Print date: 15/12/2015

SECTION 1: IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY/UNDERTAKING.

1.1 Product identifier.

Product Name: RIOPRIME 25

1.2 Relevant identified uses of the mixture and uses advised against.

Booster without detonator for commercial use.

Uses advised against:

Uses other than those recommended.

1.3 Details of the supplier of the safety data sheet.

Company: **Maxam UK, Ltd.**
Address: Moore Close, Off Tupton Way, Park Road Holmewood Industrial Park
City: S42 5UY - Chesterfield
Telephone: + (44) 7919563714
Fax: + (44) 1246855676
Web: www.maxam.net

1.4 Emergency telephone number: + (44) 1246859366 (Only available during office hours; Monday-Friday; 08:00-18:00)

SECTION 2: HAZARDS IDENTIFICATION.

2.1 Classification of the mixture.

In accordance with Regulation (EU) No 1272/2008:

Acute Tox. 4 : Harmful if inhaled.

Acute Tox. 4 : Harmful if swallowed or if inhaled.

Aquatic Chronic 3 : Harmful to aquatic life with long lasting effects.

Expl. 1.1 : Explosive; mass explosion hazard.

2.2 Label elements.

Labelling in accordance with Regulation (EU) No 1272/2008:

Pictograms:



Signal Word:

Danger

H statements:

H201 Explosive; mass explosion hazard.

P statements:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P501 Dispose of contents/container in accordance with applicable local regulations

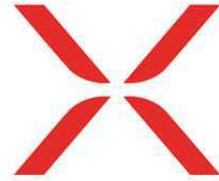
P370+P380 In case of fire: Evacuate area.

2.3 Other hazards.

-Continued on next page.-

SAFETY DATA SHEET

(in accordance with Regulation (EU) No 453/2010)



RIOPRIME 25

Version: 1
Revision date: 15/12/2015

Page 2 of 10
Print date: 15/12/2015

The product may have the following additional risks:

IMPORTANT: Do not use this explosive in jobs that contain or may contain flammable gases and/or powders.

The smoke resulting from detonation and combustion is toxic. It contains nitrogen oxides (NOx) and odourless and colourless carbon oxides (CO and CO₂). Symptoms caused by exposure to the detonation's toxic fumes are: headache, nausea, fatigue, confusion and fainting. It may also cause irritation in the respiratory system, bronchitis, and bronchopneumonia; in serious cases, acute pulmonary oedema and death may result.

IMPORTANT: In surface and interior explosions these residual fumes may migrate underground to confined spaces (including tunnels, wells, basements, etc.) where they accumulate and can remain for a long period of time. To enter these locations after an explosion, always follow the rules for entry into confined spaces and always verify that there are no toxic fumes present before entering.

Rock blasting may produce large-sized fragments, in non-stable positions, with risks of landslides and aerial projections.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS.

3.1 Substances.

Not Applicable.

3.2 Mixtures.

Substances posing a danger to health or the environment in accordance with the Regulation (EC) No. 1272/2008, assigned a Community exposure limit in the workplace, and classified as PBT/vPvB or included in the Candidate List:

Identifiers	Name	Concentrate	(*)Classification - Regulation (EC) No 1272/2008	
			Classification	specific concentration limit
CAS No: 84-66-2 EC No: 201-550-6 Registration No: 01-2119486682-27-XXXX	[1] Diethyl phthalate	10 - 25 %	-	-
Index No: 609-008-00-4 CAS No: 118-96-7 EC No: 204-289-6 Registration No: 01-2119860061-49-XXXX	[1] 2,4,6-trinitrotoluene, TNT	4 - 10 %	Acute Tox. 3 *, H311 - Acute Tox. 3 *, H331 - Acute Tox. 3 *, H301 - Aquatic Chronic 2, H411 - Expl. 1.1, H201 - STOT RE 2 *, H373 **	-

(*) The complete text of the H phrases is given in section 16 of this Safety Data Sheet.

*,** See Regulation (EC) No. 1272/2008, Annex VI, section 1.2.

[1] Substance with a Community workplace exposure limit (see section 8.1).

SECTION 4: FIRST AID MEASURES.

4.1 Description of first aid measures.

In case of doubt or when symptoms of feeling unwell persist, get medical attention. Never administer anything orally to persons who are unconscious.

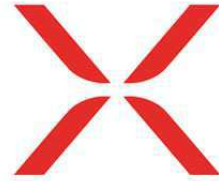
Inhalation.

If wearing contact lenses, remove them. If breathing is irregular or stops, perform artificial respiration. Do not administer anything orally. If unconscious, place them in a suitable position and seek medical assistance.

-Continued on next page.-

SAFETY DATA SHEET

(in accordance with Regulation (EU) No 453/2010)



RIOPRIME 25

Version: 1
Revision date: 15/12/2015

Page 3 of 10
Print date: 15/12/2015

In case of inhalation of toxic smoke resulting from detonation or burning, remove the affected area and take you outdoors. Prior to the withdrawal of the affected, make sure the total dissipation of smoke, or, if necessary, appropriate personal protective equipment, (unit autonomous respiratory, mask with its proper filter, etc...).

IMPORTANT: in case of any exposure to these toxic smoke, do need an immediate medical examination. There is a risk of suffering from an edema of lung effect delayed to such exposure

Eye contact.

If wearing contact lenses, remove them. Wash eyes with plenty of clean and cool water for at least 10 minutes while pulling eyelids up, and seek medical assistance.

Skin contact.

Remove contaminated clothing. Wash skin vigorously with water and soap or a suitable skin cleaner. **NEVER** use solvents or thinners.

Ingestion.

If accidentally ingested, seek immediate medical attention. Keep calm. **NEVER** induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed.

Harmful Product, prolonged exposure due to inhalation may cause anaesthetic effects and the need for immediate medical assistance.

4.3 Indication of any immediate medical attention and special treatment needed.

In case of doubt or when symptoms of feeling unwell persist, get medical attention. Never administer anything orally to persons who are unconscious.

SECTION 5: FIREFIGHTING MEASURES.

The product is NOT classified as flammable, in case of fire the following measures should be taken:

5.1 Extinguishing media.

Recommended extinguishing methods.

NEVER ATTEMPT TO EXTINGUISH THE FIRE

Everyone must move away to a safe distance/area

5.2 Special hazards arising from the mixture.

Special risks.

Fire can cause thick, black smoke. As a result of thermal decomposition, dangerous products can form: carbon monoxide, carbon dioxide. Exposure to combustion or decomposition products can be harmful to your health.

5.3 Advice for firefighters.

See section 5.1 of this Safety Data Sheet

SECTION 6: ACCIDENTAL RELEASE MEASURES.

6.1 Personal precautions, protective equipment and emergency procedures.

For exposure control and individual protection measures, see section 8.

6.2 Environmental precautions.

Prevent the contamination of drains, surface or subterranean waters, and the ground.

6.3 Methods and material for containment and cleaning up.

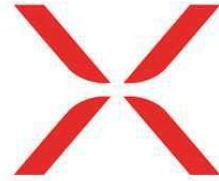
The contaminated area should be immediately cleaned with an appropriate de-contaminator.

6.4 Reference to other sections.

-Continued on next page.-

SAFETY DATA SHEET

(in accordance with Regulation (EU) No 453/2010)



RIOPRIME 25

Version: 1
Revision date: 15/12/2015

Page 4 of 10
Print date: 15/12/2015

For exposure control and individual protection measures, see section 8.
For later elimination of waste, follow the recommendations under section 13.

SECTION 7: HANDLING AND STORAGE.

7.1 Precautions for safe handling.

For personal protection, see section 8. Never use pressure to empty the containers. They are not pressure-resistant containers. In the application area, smoking, eating, and drinking must be prohibited. Follow legislation on occupational health and safety. Keep the product in containers made of a material identical to the original.

7.2 Conditions for safe storage, including any incompatibilities.

Store according to local legislation. Observe indications on the label. Store the containers below 50 ° C, in a dry and well-ventilated place, far from sources of heat and direct solar light. Keep far away from ignition points. Keep away from oxidising agents and from highly acidic or alkaline materials. Do not smoke. Prevent the entry of non-authorized persons. Once the containers are open, they must be carefully closed and placed vertically to prevent spills.

Classification and threshold amount of storage in accordance with Annex I to Directive 2012/18/EU (SEVESO III)::

Code	Description	Qualifying quantity (tonnes) for the application of	
		Lower-tier requirements	Upper-tier requirements
P1a	EXPLOSIVES	10	50

7.3 Specific end use(s).

Booster without detonator for commercial use.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION.

8.1 Control parameters.

Work exposure limit for:

Name	CAS No.	Country	Limit value	ppm	mg/m ³
Diethyl phthalate	84-66-2	United Kingdom [1]	Eight hours		5
			Short term		10
2,4,6-trinitrotoluene, TNT	118-96-7	United Kingdom [1]	Eight hours		0,5
			Short term		

[1] According Limit Value (IOELV) list in 2nd Indicative Occupational Exposure adopted by Health and Safety Executive.

The product does NOT contain substances with Biological Limit Values.

Concentration levels DNEL/DMEL:

Name	DNEL/DMEL	Type	Value
Diethyl phthalate N. CAS: 84-66-2 N. CE: 201-550-6	DNEL (Workers)	Inhalation, Long-term, Local effects	10,56 (mg/m ³)
	DNEL (Workers)	Inhalation, Long-term, Systemic effects	10,56 (mg/m ³)

DNEL: Derived No Effect Level, level of exposure to the substance below which adverse effects are not anticipated.

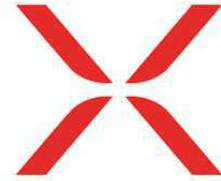
DMEL: Derived Minimal Effect Level, exposure level corresponding to a low risk, that risk should be considered a tolerable minimum.

8.2 Exposure controls.

-Continued on next page.-

SAFETY DATA SHEET

(in accordance with Regulation (EU) No 453/2010)



RIOPRIME 25

Version: 1
Revision date: 15/12/2015

Page 5 of 10
Print date: 15/12/2015

Measures of a technical nature:

Provide adequate ventilation, which can be achieved by using good local exhaust-ventilation and a good general exhaust system.

Concentration:	100 %		
Uses:	Booster without detonator for commercial use.		
Breathing protection:			
If the recommended technical measures are observed, no individual protection equipment is necessary.			
Hand protection:			
PPE:	Work gloves.		
Characteristics:	«CE» marking, category I.		
CEN standards:	EN 374-1, En 374-2, EN 374-3, EN 420		
Maintenance:	Keep in a dry place, away from any sources of heat, and avoid exposure to sunlight as much as possible. Do not make any changes to the gloves that may alter their resistance, or apply paints, solvents or adhesives.		
Observations:	Gloves should be of the appropriate size and fit the user's hand well, not being too loose or too tight. Always use with clean, dry hands.		
Material:	PVC (polyvinyl chloride)	Breakthrough time (min.):	> 480
		Material thickness (mm):	0,35
Eye protection:			
If the product is handled correctly, no individual protection equipment is necessary.			
Skin protection:			
PPE:	Protective clothing.		
Characteristics:	«CE» marking, category II. Protective clothing should not be too tight or loose in order not to obstruct the user's movements.		
CEN standards:	EN 340		
Maintenance:	In order to guarantee uniform protection, follow the washing and maintenance instructions provided by the manufacturer.		
Observations:	The protective clothing should offer a level of comfort in line with the level of protection provided in terms of the hazard against which it protects, bearing in mind environmental conditions, the user's level of activity and the expected time of use.		
PPE:	Work footwear.		
Characteristics:	«CE» marking, category II.		
CEN standards:	EN ISO 13287, EN 20347		
Maintenance:	This product adapts to the first user's foot shape. That is why, as well as for hygienic reasons, it should not be used by other people.		
Observations:	Work footwear for professional use includes protection elements aimed at protecting users against any injury resulting from an accident		

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES.

9.1 Information on basic physical and chemical properties.

Appearance: Pasty, doughy mass packed in plastic pipes.

Colour: N.A./N.A.

Odour: N.A./N.A.

Odour threshold: N.A./N.A.

pH: N.A./N.A.

Melting point: N.A./N.A.

Boiling Point: N.A./N.A.

Flash point: > 60 °C

Evaporation rate: N.A./N.A.

Inflammability (solid, gas): N.A./N.A.

Lower Explosive Limit: N.A./N.A.

Upper Explosive Limit: N.A./N.A.

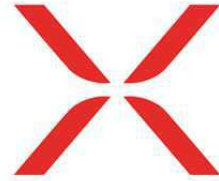
Vapour pressure: N.A./N.A.

Vapour density: N.A./N.A.

-Continued on next page.-

SAFETY DATA SHEET

(in accordance with Regulation (EU) No 453/2010)



RIOPRIME 25

Version: 1
Revision date: 15/12/2015

Page 6 of 10
Print date: 15/12/2015

Relative density: 1.5 g/cm³
Solubility: N.A./N.A.
Liposolubility: N.A./N.A.
Hydrosolubility: N.A./N.A.
Partition coefficient (n-octanol/water): N.A./N.A.
Auto-ignition temperature: N.A./N.A.
Decomposition temperature: 200°C
Viscosity: N.A./N.A.
Explosive properties: N.A./N.A.
Oxidizing properties: N.A./N.A.
N.A./N.A. = Not Available/Not Applicable due to the nature of the product

9.2. Other information.

VOC content (p/p): 6,95 %
VOC content: **104,25** g/l

SECTION 10: STABILITY AND REACTIVITY.

10.1 Reactivity.

The product does not present hazards by their reactivity.

10.2 Chemical stability.

Stable under the recommended handling and storage conditions (see section 7).

10.3 Possibility of hazardous reactions.

The product does not present possibility of hazardous reactions.

10.4 Conditions to avoid.

Avoid any improper handling.

10.5 Incompatible materials.

Keep away from oxidising agents and from highly alkaline or acidic materials in order to prevent exothermic reactions.

10.6 Hazardous decomposition products.

Depending on conditions of use, can be generated the following products:

- CO_x (carbon oxides).
- Organic compounds.
- Aromatics compounds.

SECTION 11: TOXICOLOGICAL INFORMATION.

11.1 Information on toxicological effects.

Repeated or prolonged contact with the product can cause the elimination of oil from the skin, giving rise to non-allergic contact dermatitis and absorption of the product through the skin.

Splatters in the eyes can cause irritation and reversible damage.

a) acute toxicity;

Product classified:

Acute toxicity (Inhalation), Category 4: Harmful if inhaled.

Acute toxicity (Oral), Category 4: Harmful if swallowed.

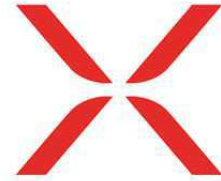
Acute Toxicity Estimate (ATE):

Mixtures:

ATE (Dermal) = 4317 mg/kg

SAFETY DATA SHEET

(in accordance with Regulation (EU) No 453/2010)



RIOPRIME 25

Version: 1
Revision date: 15/12/2015

Page 7 of 10
Print date: 15/12/2015

ATE (Inhalation) = 10072 mg/l/4 h (Gases)
ATE (Oral) = 1439 mg/kg

b) skin corrosion/irritation;
Not conclusive data for classification.

c) serious eye damage/irritation;
Not conclusive data for classification.

d) respiratory or skin sensitisation;
Not conclusive data for classification.

e) germ cell mutagenicity;
Not conclusive data for classification.

f) carcinogenicity;
Not conclusive data for classification.

g) reproductive toxicity;
Not conclusive data for classification.

h) STOT-single exposure;
Not conclusive data for classification.

i) STOT-repeated exposure;
Based on available data, the classification criteria are not met.

j) aspiration hazard;
Not conclusive data for classification.

SECTION 12: ECOLOGICAL INFORMATION.

12.1 Toxicity.

No information is available regarding the ecotoxicity of the substances present.

12.2 Persistence and degradability.

No information is available about persistence and degradability of the product.

12.3 Bioaccumulative potencial.

Information about the bioaccumulation of the substances present.

Name	Bioaccumulation			
	Log Pow	BCF	NOECs	Level
Diethyl phthalate N. CAS: 84-66-2 EC No: 201-550-6	2,47	-	-	Very High

12.4 Mobility in soil.

No information is available about the mobility in soil.
The product must not be allowed to go into sewers or waterways.
Prevent penetration into the ground.

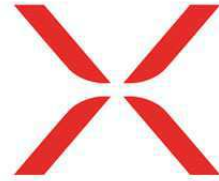
12.5 Results of PBT and vPvB assessment.

No information is available about the results of PBT and vPvB assessment of the product.

-Continued on next page.-

SAFETY DATA SHEET

(in accordance with Regulation (EU) No 453/2010)



RIOPRIME 25

Version: 1
Revision date: 15/12/2015

Page 8 of 10
Print date: 15/12/2015

12.6 Other adverse effects.

No information is available about other adverse effects for the environment.

SECTION 13 DISPOSAL CONSIDERATIONS.

Destruction of explosives should be carried out by specialised personnel, using controlled processes and installations authorised by the competent bodies. Consult your manufacturer and/or distributor.

13.1 Waste treatment methods.

Do not dump into sewers or waterways. Waste and empty containers must be handled and eliminated according to current, local/national legislation.

Follow the provisions of Directive 2008/98/EC regarding waste management.

SECTION 14: TRANSPORT INFORMATION.

Transport following ADR rules for road transport, RID rules for railway, ADN for inner waterways, IMDG for sea, and ICAO/IATA for air transport.

Land: Transport by road: ADR, Transport by rail: RID.

Transport documentation: Consignment note and written instructions

Sea: Transport by ship: IMDG.

Transport documentation: Bill of lading

Air: Transport by plane: ICAO/IATA.

Transport document: Airway bill.

14.1 UN number.

UN No: UN0042

14.2 UN proper shipping name.

Description: UN 0042, BOOSTERS, 1, (B1000C)

14.3 Transport hazard class(es).

Class(es): 1

14.4 Packing group.

Packing group: Not applicable.

14.5 Environmental hazards.

Marine pollutant: No

14.6 Special precautions for user.

Labels: 1



Hazard number: Not applicable.

ADR LQ: 0

Provisions concerning carriage in bulk ADR: Not authorized carriage in bulk in accordance with ADR.

Transport by ship, FEm – Emergency sheets (F – Fire, S - Spills):

Proceed in accordance with point 6.

-Continued on next page.-

SAFETY DATA SHEET

(in accordance with Regulation (EU) No 453/2010)



RIOPRIME 25

Version: 1
Revision date: 15/12/2015

Page 9 of 10
Print date: 15/12/2015

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code.

The product is not transported in bulk.

SECTION 15: REGULATORY INFORMATION.

15.1 Safety, health and environmental regulations/legislation specific for the mixture.

The product is not affected by the Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer.

See annex I of the Directive 96/82/EC of 9 December 1996 on the control of major-accident hazards involving dangerous substances.

Product classification according to Annex I of Directive 2012/18/EU (SEVESO III): P1a

The product is not affected by Regulation (EU) No 528/2012 concerning the making available on the market and use of biocidal products.

The product is not affected by the procedure established Regulation (EU) No 649/2012, concerning the export and import of dangerous chemicals.

15.2 Chemical safety assessment.

There has been no evaluation a chemical safety assessment of the product.

SECTION 16: OTHER INFORMATION.

Complete text of the H phrases that appear in section 3:

H201	Explosive; mass explosion hazard.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

Classification codes:

Acute Tox. 3 [Dermal] : Acute toxicity (Dermal), Category 3
Acute Tox. 3 [Inhalation] : Acute toxicity (Inhalation), Category 3
Acute Tox. 3 [Oral] : Acute toxicity (Oral), Category 3
Acute Tox. 4 [Inhalation] : Acute toxicity (Inhalation), Category 4
Acute Tox. 4 [Oral] : Acute toxicity (Oral), Category 4
Aquatic Chronic 2 : Chronic effect to the aquatic environment, Category 2
Aquatic Chronic 3 : Chronic effect to the aquatic environment, Category 3
Expl. 1.1 : Explosive Division 1.1
STOT RE 2 : Specific target organ toxicity following a repeated exposure, Category 2

Sections changed compared with the previous version:

1,2,3,4,7,8,9,10,11,14,16

SDS updated according to CLP classification of mixtures / substances. Any earlier version SDS is 0.

Labelling in accordance with Directive 1999/45/EC:

Symbols:

-Continued on next page.-

SAFETY DATA SHEET

(in accordance with Regulation (EU) No 453/2010)



RIOPRIME 25

Version: 1
Revision date: 15/12/2015

Page 10 of 10
Print date: 15/12/2015



Explosive

R Phrases:

R3 Extreme risk of explosion by shock, friction, fire or other sources of ignition.

S Phrases:

S60 This material and its container must be disposed of as hazardous waste.

Abbreviations and acronyms used:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

BCF: Bioconcentration factor.

CEN: European Committee for Standardization.

DMEL: Derived Minimal Effect Level, exposure level corresponding to a low risk, that risk should be considered a tolerable minimum.

DNEL: Derived No Effect Level, level of exposure to the substance below which adverse effects are not anticipated.

EC50: Half maximal effective concentration.

PPE: Personal protection equipment.

IATA: International Air Transport Association.

IMDG: International Maritime Code for Dangerous Goods.

LC50: Lethal concentration, 50%.

LD50: Lethal dose, 50%.

Log Pow: Logarithm of the partition octanol-water.

NOEC: No observed effect concentration.

RID: Regulations Concerning the International Transport of Dangerous Goods by Rail.

Key literature references and sources for data:

<http://eur-lex.europa.eu/homepage.html>

<http://echa.europa.eu/>

Regulation (EU) No 453/2010.

Regulation (EC) No 1907/2006.

Regulation (EU) No 1272/2008.

The information given in this Safety Data Sheet has been drafted in accordance with COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

The information in this Safety Data Sheet is given only in good faith (bona fide) and believing in its accuracy, based in the knowledge currently available for the product. MAXAM does not accept any commitment and/or any legal responsibility concerning the use and/or misuse of the information under whatever specific circumstances.