

TASNİF DIŞI



**MAKİNA ve KİMYA ENDÜSTRİSİ KURUMU
GENEL MÜDÜRLÜĞÜ
ANKARA**



04671 25.11.2015

Sayı: 89960175-(NEB-2)

Konu: 52 Adet Ana Delici-51 Adet Ön Delici Harp Başlığının taşıma işi

Sayın Yetkili,

Kurumumuz ihtiyacı olan 52 Adet Ana Delici Harp Başlığı ve 51 Adet Adet Ön Delici Harp Başlığı, sevke hazırdır. Söz konusu malzemeler, ekte verilen "İhale Dokümanı"na uygun olarak RWM Italia S.p.A. firmasının depolarından teslim alınarak MKE Mühimmat Fabrikası Müdürlüğü / Kırıkkale'ye taşıtılacaktır.

Bahse konu harp başlıkları RWM Italia S.p.A.firmasının Domusnovas'da bulunan deposundan Cagliari (CI)/İtalya Limanına kadar karayolu ile sonrasında deniz yolu ile sevk edilecek olup, malzemelerin en geç **14 Aralık 2015** tarihinde Cagliari Limanından yüklenmesi gerekmektedir.

RWM Italia S.p.A. tarafından kara yolu sevkiyat işlemi için gerekli izinlerin alınabilmesini teminen; malzemeyi teslim alacak yüklenici firmanın, yükleme tarihinden **en az 7 gün önce** RWM firması yetkilileri ile iletişime geçerek, karayolu nakliyesi için kullanılacak araç ve şoför bilgisi ile deniz yolu nakliyesini gerçekleştirecek gemi bilgisini iletmesi gerekmektedir.

Ekli tabloda istenilen bilgilerin **eksiksiz doldurularak** konu taşımaya ait tekliflerinizin, **VERİLMESİ ZORUNLU OLAN BELGELERLE BİRLİKTE** kapalı zarf içinde **02/12/2015 Çarşamba günü saat 14.00'e kadar Başkanlığımıza gönderilmesini rica ederiz.**

Zeynep TAŞTEMEL
Dış Alım Şube Müdürü

Köksal KÜÇÜKTURAN
İkmal Dairesi Başkanı

EK:

- 1) İhale Dokümanı ve eki Teyit Taahhütnamesi (4 sayfa)
- 2) MSDS (2 Tk.-24 sayfa)

19/06/2015 Uzman: N.ÖZKAN

**MKE KURUMU GENEL MÜDÜRLÜĞÜ
İKMAL DAİRESİ BAŞKANLIĞI**
06330 Tandoğan - Ankara / TÜRKİYE
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E-posta: mkekikm@mkek.gov.tr
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ISO 9001

NATO
AQAP 2120

TASNİF DIŐI



**MAKİNA ve KİMYA ENDÜSTRİSİ KURUMU
GENEL MÜDÜRLÜĐÜ
ANKARA.**



İHALE DOKÜMANI

TAŐIMAYA KONU MALZEMENİN			
CİNSİ VE MİKTARI	52 Adet Ana Delici Harp BaŐlığı Follow Through Bomb (FTB)	51 Adet Ön Delici Harp BaŐlığı Augmenting Charge (AC)	
AMBALAJ BOYUTLARI (1 Adet)	50 x 160 x 40 cm	80 x 60 x 65 cm	
BRÜT AĐIRLIK (1 adet)	YaklaŐık 300 Kg	YaklaŐık 120 Kg	
NETAĐIRLIK (1 adet)	YaklaŐık 250 Kg	YaklaŐık 80 Kg	
NET PATLAYICI AĐIRLIĐI (1 adet)	YaklaŐık 37 Kg PBXN-109	YaklaŐık 24 Kg PBXN-110	
UN NUMARASI	UN 0034 - 1.1D	UN 0059 - 1.1D	
NOT	PALETLİ ÜST ÜSTE TAŐINABİLİR	PALETLİ ÜST ÜSTE TAŐINAMAZ	
<u>TaŐıma 20'lik konteyner ile yapılacak olup, kaç konteyner ile taŐıma yapılacaĐı firmanızın vereceĐı teklifte belirtilecektir.</u>			
YÜKLEME LİMANI	RWM Italia S.p.A. firmasının aŐaĐıda adresi belirtilen depoları Loc Matt'è Conti 09015 Domusnovas (Ci) İTALYA	BOŐALTMA LİMANI	Derince Limanına oradan da MKE Mühimmat Fabrikası MüdürlüĐü / Kırıkkale'ye taŐıtırlacaktır
TAŐIMAYI YAPACAK GEMİNİN			
IMO SERTİFİKASI NO.SU		P&I SİĐORTASI	
BAYRAĐI		GEMİ ADI VE YAŐI	
YÜKLEME LİMANI ETASI		TAHLİYE LİMANI ETASI	
NAVLUN		BOŐALTMA MASRAFI	
ORDİNO		DEMURAJ	
DİĐER		BOŐALTMA SÜRESİ	
YÜKLEME SÜRESİ		TOPLAM TAŐIMA BEDELİ*	
SAVAŐ SİĐ. SÜRPRİMİ			

***Yükleme, boşaltma vb. masraflar dâhil Toplam TaŐıma Bedeli teklifinizde mutlaka belirtilecektir.**



MKE KURUMU GENEL MÜDÜRLÜĐÜ
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NATO
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GENEL HUSUSLAR

- 1) Yükleme günü için ihracatçı ile mutabakat firmanızca sağlanacaktır. Yüklemede herhangi bir demuraj ya da ölü navlun söz konusu olmayacaktır. Yükleme Limanında sonradan oluşabilecek herhangi bir ardiye, ihracat detention vb. masraf Kurumumuz tarafından ödenmeyecektir.
- 2) Navlun, varış tarihindeki T.C. Merkez Bankası döviz satış kuru üzerinden TL olarak ödenecektir.
- 3) Malzemeyi taşıyacak geminin Class'lı (Türk Loydu veya IACS üyesi/yarı üyesi) olması zorunludur.
- 4) TÜRK BAYRAKLI gemi olması tercih sebebi olacaktır.
- 5) Gemi 35 yaşından küçük olacaktır. (Maksimum 34 yaşında olabilecektir.)
- 6) Süresi içerisinde gönderilmeyen teklifler dikkate alınmayacaktır.
- 7) Teklifinizde belirtilen bedelin/ücretin dışında herhangi bir ödeme yapılmayacaktır.
- 8) Teklifinizde gemi adı, bayrağı, yükleme tarihi ve yaşı belirtilecektir.
- 9) Konteynere ait CSC, konteynere yükleme yapılmadan önce Kurumumuza gönderilecektir.
- 10) Yükleme yapıldıktan sonra, gemi sefere çıkar çıkmaz Tehlikeli Yük Manifest Deklerasyonu Kurumumuza gönderilecektir.
- 11) Malzeme varış limanı olan Derince Limanından MKE Mühimmat Fabrikası Müdürlüğü / Kırıkkale'ye yüklenici firma tarafından nakledilecektir.
- 12)
 - a) Yükleniciden Sözleşme bedeli üzerinden %10 oranında Kesin Teminat alınacaktır. Kesin teminatın banka teminat olarak verilmesi halinde mektubun süresi malzemenin boşaltma limanında Kurumumuzca teslim alınmasından 10 gün sonrasına kadar geçerli olacaktır.
 - b) Yüklenici 4735 sayılı Kanunun 10. maddesinde belirtilen Mücbir sebep halleri dışında:
 - Usulüne göre sözleşme yapmadığı takdirde hakkında 4734 sayılı Kanunun 58. maddesi gereğince,
 - İhale dokümanı ve Sözleşme hükümlerine uygun olarak tahhüdünü yerine getirmedeği takdirde 4735 sayılı Kanunun 26. maddesi,uyarınca işlem yapılır.
- 13) Boşaltma limanında MKE Kurumunun sorumluluğu; ilgili acentenin liman işletmesine Özet Beyanı vermesini müteakip başlar.
- 14) **Malzemelerin gümrükleme işlemleri TUBİTAK SAGE tarafından gerçekleştirilecektir.**
- 15) Söz konusu alım Ceza ve Yasaklara ilişkin hükümler hariç, 4734 sayılı Kamu İhale Kanununa ve 4735 sayılı Kamu İhale Sözleşmeleri Kanununa tabi olmayıp, Kurumumuzca çıkarılan Satın Alma ve İhale Yönetmeliği hükümlerine göre yapılacaktır. İhaleyi yapıp yapmamakta veya dilediğine vermekte serbesttir.





DİĞER HUSUSLAR

1) TEKLİFLERİN SUNULMASI

- a) Fiyat içeren teklif ile verilmesi zorunlu belgelerin tamamı bir zarfın içine konulacaktır.
b) Zarfın üzerine
- İsteklinin adı, soyadı veya ticaret unvanı ile tebligata esas açık adresi,
- Teklifin hangi işe ait olduğu,
- İdarenin açık adresi,

yazılacaktır.

Yukarıda istenilen bilgiler yazılmamış olan teklif zarfları değerlendirmeye alınmayacaktır.

2) İSTENİLEN BELGELER:

- a) **Zorunlu Belge/Belgeler:** Aşağıda belirtilen belgelerin teklifle birlikte sunulması zorunludur:

- Class Sertifikası veya yüklemeden önce verileceğine,
- P&I Belgesi veya yüklemeden önce verileceğine,
- Konteynere ait CSC veya CSC'nin yüklemeden önce verileceğine,
- Tehlikeli Yük Manifest Deklerasyonunun yüklemeden hemen sonra verileceğine,

ilişkin teyit taahhütnamesi,

- Teklif edilen geminin taşımaya konu malzemeyi taşıyabileceğini gösterir Tehlikeli Mal Taşıma Uygunluk Belgesi.

- b) **Diğer Belgeler:** Aşağıda belirtilen belgeler teklifle birlikte sunulması halinde tercih sebebi sayılacaktır:

- NCAGE BELGESİ
- Nato Güvenlik/ Nato Tesis Güvenlik Belgesi

3) TEKLİFLERİN AÇILMASI: Teklifler son teklif verme tarihi olan **02/12/2015 Çarsamba günü saat: 14.00'te** açılacaktır.

4) TEKLİFLERİN DEĞERLENDİRİLMESİ

- a) Kapalı zarf içinde verilmeyen faks teklif kabul edilmeyecektir,
b) Verilmesi zorunlu olan belgeler sonradan tamamlanılmayacaktır,
c) Verilmesi zorunlu olan belgeleri eksik olan teklifler değerlendirmeye alınmayacaktır.

İRTİBAT BİLGİLERİ

İhracatçı Firma

RWM Italia S.p.A.,
Loc Matt'è Conti 09015 Domusnovas
(Ci) İtalya
Tel. No.: + 39 0781 72801
Fax No.: + 39 0781 7280236

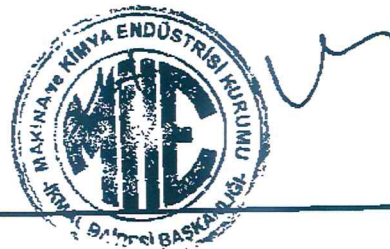
Temas Noktası:

Aldo Somanzi
Tel. No.: + 39 030 9043-424
E-mail: Aldo.somanzi@rheinmetall.com

Ek: Teyit Taahhütnamesi (1 sayfa)

Mümessil Firma

Makine Optik- Ümit Ayan
Tel. No.: +90 (312) 426 30 44 - +90 (312) 468 20 73
Cep Tel.: 0549 675 34 01





TAAHHÜTNAME

52 Adet Ana Delici Harp Başlığı ve 51 Adet Adet Ön Delici Harp Başlığı'nın RWM Italia S.p.A. firmasının Domusnovas'daki depoları/İTALYA - MKE Mühimmat Fabrikası Müdürlüğü / Kırıkkale arası nakliye ihalesine verdiğimiz teklifi; bu işe ait İhale Dokümanı'nın tamamını okuyup, inceleyip tüm şartlarını kabul ettikten sonra verdiğimiz teyit,

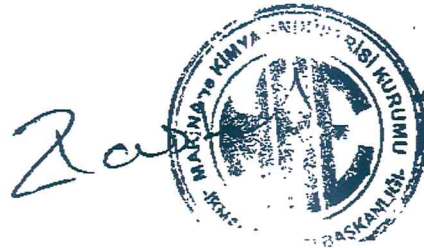
ve

- Konteynere ait CSC veya CSC'nin yüklemeden önce verileceğini,
- Tehlikeli Yük Manifest Deklerasyonunun yüklemeden hemen sonra verileceğini,

Eğer teklifle birlikte sunulmamış ise;

- Class Sertifikası yüklemeden önce verileceğini,
- P&I Belgesinin yüklemeden önce verileceğini,

taahhüt ederiz.



---/---/---
Ad SOYAD/ Unvan (Kaşe)
İmza

**EK-1
NAKLIYE BİLGİSİ**

Gelecek Malzeme Tanımı:

Malzeme Tanımı	Miktarı	Patlayıcı Cinsi ve Miktarı
Ana Delici Harp Başlığı Follow Through Bomb (FTB)	52 Adet	Yaklaşık 24 Kg PBXN-109
Ön Delici Harp Başlığı Augmenting Charge (AC)	51 Adet	Yaklaşık 37 Kg PBXN-110

Firmanın İletişim Bilgileri:

Açık Ad ve Adres	RWM Italia S.p.A. Loc.Matt'è Conti. 09015 Domusnavas (Ci) Italia Tel.:+39 0781 72801 Fax:+39 0781 7280236
Temas Noktası	Aldo Somanzi Tel.:+39 030 9043-424 Aldo.somanzi@rheinmetall.com
Türkiye Temsilcisi	Makina Optik Ümit Ayan Tel.:0312 426 30 44 - 0312 468 20 73 0549 675 34 01

Ambalaj Bilgileri:

	1 Adet Ana Delici Harp Başlığı Follow Through Bomb (FTB)	1 Adet Ön Delici Harp Başlığı Augmenting Charge (AC)
Ambalaj Boyutları	50x160x40 cm	80x60x65 cm
Brüt Ağırlık	App. 300 Kg	App. 120 Kg
Net Ağırlık	App. 250 Kg	App. 80 Kg
Net Patlayıcı Ağırlığı	App. 37 Kg PBXN-109	App. 24 Kg PBXN-110
UN Numarası	UN 0034-1.1D	UN 0059-1.1D
Notlar	Paletli	Paletli
	Üst Üste Taşınabilir	Üst Üste Taşınamaz

Tahmini Sevkiyat Tarihleri

52 adet Ana Delici ve 51 adet Ön Delici harp başlığı için yükleme tarihi 14 Aralık 2015 olarak ön görülmüştür.

Teslim Alma Noktası

52 adet Ana Delici ve 51 adet Ön Delici dolumunun yapıldığı RWM Italia depolarından teslim alınacaktır.

EK-1
NAKLİYE BİLGİSİ

Gümrük işlemleri

Gümrük işlemleri TUBİTAK SAGE tarafından gerçekleştirilerek ilgili belgelerin MKE'ye ibraz edilmesini müteakiben MKE tarafından TUBİTAK SAGE hesabına 7 gün içerisinde banka havalesi ile ödenecektir.

(Kurumumuz ile TUBİTAK SAGE arasında imza edilen Nüfuz Edici Bomba Seri Üretim Dönemi F-16 Sertifikasyonu, Plastik Patlayıcı Dolumu, Eğitim, Teknik Destek Ve Danışmanlık İle Atış Test Hizmetleri İşlerine Ait Alt Yüklenici Sözleşmesi kapsamında,

İDARE MKE Mühimmat Fabrikası
YÜKLENİCİ TUBİTAK SAGE olmak üzere

10.7 YÜKLENİCİ tarafından gümrükte ödenecek olan KDV, Ardiye, Gümrük Vergisi vb tüm harcamalar YÜKLENİCİ tarafından ilgili belgelerin İDARE'ye ibraz edilmesini müteakiben İDARE tarafından YÜKLENİCİ nin hesabına 7 gün içerisinde banka havalesi ile ödenecektir.

17.4 Plastik patlayıcı dolumu işi için gümrük işlemleri YÜKLENİCİ tarafından yapılacaktır.

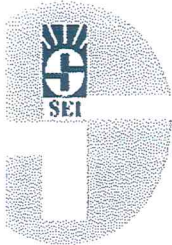
29.4. Plastik Patlayıcı Dolumu işinin nakliye ve sigortasına ilişkin her türlü sorumluluk ve masraf İdare'ye aittir.

29.5 İthalatta ve ihracatta kullanılacak tüm belgeler YÜKLENİCİ adına düzenlenecek ve gerekli tüm izinler YÜKLENİCİ adına alınacaktır.

Sözleşme eki iş tanımı dokümanı uyarınca

- İDARE, patlayıcı dolumları gerçekleştirilmiş harp başlıklarının RWM Italia S.p.A Domusnovas/İtalya ambarlarında kabulünü yapmaktan ve söz konusu başlıkların kendi tesislerine nakliyesini gerçekleştirmekten sorumludur.

EK-2



MATERIAL SAFETY DATA SHEET

MSDS 0000003-B

Compiling Date:
04/03/2009

EXPLOSIVE "PBXN-109"

1. PRODUCT & COMPANY IDENTIFICATION

1.1 TRADE NAME

COMMERCIAL NAME: EXPLOSIVE "PBXN-109"

PRODUCT P/N: V 39033.00

NSN: N. A.

1.2 USES:

Cast-cure polymer bonded secondary explosive. Military use only.

1.3 COMPANY IDENTIFICATION:

SUPPLIER: SEI - Società Esplosivi Industriali S.p.A. Cod. Fisc. / P. IVA / N° Reg. Imp. BS 00274240175

First Plant:

Via Industriale, 8/D - 25016 Ghedi (BS)

Tel +39 030 90411

Fax +39 030 9031461

Production Plant of Domusnovas:

Località Matt'è Conti - 09015 Domusnovas (CI)

Tel. +39 0781 72801

Fax +39 0781 7280236

Email: info@sei-spa.com

1.4 EMERGENCY CONTACTS:

SEI - Società Esplosivi Industriali S.p.A Ghedi (BS)

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+39 0781 72801 (Only in office time)

2. HAZARDS IDENTIFICATION

Emergency Overview

Not properly use could cause ignition of combustible materials places to contact with it during and after the operation.

Health Hazardous: Noxious, it can cause damages if ingested.
During the combustion, development of dangerous vapors for the health.
Annoying for the eyes. Eventuality of ocular lesions.
It may provoke cutaneous irritations in particular for repeated or extended contact.

Ambient Hazardous: N. D.

Chemical-Physical Damages:

Solid Fuel. Possible explosive inflammable mixture formation.

Classification/ Specific Risks:

In agreement with the criteria of classification CE, the product is classified «EXPLOSIVE»:
R - 2 - 6 - 33
S - 15 - 28 - 35 - 40 - 41 - 45



MATERIAL SAFETY DATA SHEET

MSDS 0000003-B

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04/03/2009

3. COMPOSITION/INFORMATIONS ON INGREDIENTS

3.1 GENERAL PRODUCT DESCRIPTION:

The product is constituted from an explosive solid mixture of different substances as follows:

Composition					
Substance Type	% Composition	CAS No.	EC No.	Classification	Risk Phrases (R)
Polybutadiene, Liquid, Hydroxyl-Terminated	7%	69102-90-5	203-450-8	N. D.	N. D.
Di (2-ethylhexyl) adipate	7%	103-23-1	203-090-1	Xn	40
Isophorone Diisocyanate	1%	4098-71-9	N.D.	Xn	42
Triphenylbismuth + Dibutyltin dilaurate	0.02%	603-33-8 77-58-7	210-033-4 201-039-8	Xn T+, N	22 22, 26, 36/38, 50/53
N, N 2- Hydroxyethyl dimethyl-hydantoin	0.3%	26850-24-8	N. D.	N. D.	N. D.
Aluminium	20%	7429-90-5	231-072-3	F	15, 16, 17
2,2'-methylenebis (4-methyl-6-tertiarybutyl Phenol)	0.1%	128-37-0	N. D.	Xi	22, 36, 37, 38
Cyclotrimethylene trinitramine (RDX)	64%	00121-82-4	N. D.	E, T, Xn	2, 23/24/25, 33, 51/53

3.2 DANGEROUS COMPOUNDS:

- a) **Atmosphere & Health Hazard**
Solid Fuel.
During combustion, development of dangerous vapors for the health.
- b) **Work Exposure Hazard**
N. D.
- c) **Component Analysis - Ecotoxicity - Aquatic Toxicity**
N. D.

3.3 CLASSIFICATION: Explosive Substance.

3.4 NAME&RECORD NUMBER OR EINECS NUMBER: N. D.

4. FIRST AID MEASURES

Ingestion: To only in the event rinse the mouth with water in which the injured person he is completely aware.
«NEVER PROVOKE VOMIT».
To call the doctor who will decide on the opportunity of gastric lavander.



MATERIAL SAFETY DATA SHEET

MSDS 000003-B

Compiling Date:
04/03/2009

- Inhalation:** Not evidenced similar effects in normal conditions of use. In case of burning:
If necessary, removing the injured person from contaminated zone and holding it in place at rest in ventilated or opened air.
In any case to call the doctor.
- Skin Contact:** Immediately remove the contaminated clothes.
Abundantly wash with water the parts hit.
In any case to call the doctor.
- Eye Contact:** Washing the eyes with current water immediately in order at least 15 minutes holding the opened eyelids.
Always consult an ophthalmologist.

5. FIRE FIGHTING MEASURES

Fire-Fighting

Procedures:

Suggested:

Water - (CO₂).

Not Suggested:

Chemical Powders.

Specific Risks:

Do not attempt to extinguish the fire, due to the risk of an explosion occurring.
During the combustion, toxic vapor development and smoke suffocating with prevalence of: nitric carbon monoxides (CO+CO_x) and oxides (NO_x).

Extreme Measures:

Only if possible, fight the fire from a protected position using water.
Cooling with vaporized water the containers exposed to the fire.

Worker Protections:

Evacuating the zone quickly from all the present ones, going to a safety and "upwind" position in order to avoid also breathing smoke and fumes. Suddenly informing the local authorities and fire service.

6. ACCIDENTAL RELEASE MEASURES

Personal Protectives:

Avoiding contact with eyes and the skin.
«NO SMOKING».
Eliminate every source of ignition.
Using gloves, glances and suitable protecting clothes during the manipulation.

Ambiental Protectives:

To prevent to the product to catch up superficial water course, to introduce in the drain net.
In contrary case to inform the competent authorities quickly.

Clean-Up Procedures:

Collecting with mechanical means, by means of apt shockproof and spark proof equipment.
Stocking residual in containers labeled for successive digestion like refusal in authorized centers, in compliance with the enforced local laws.

Waste Disposal:

Eliminate in the eventuality of contaminated aqueous solution in conformity with the prescription prescribed.



MATERIAL SAFETY DATA SHEET

MSDS 000003-B

Compiling Date:
04/03/2009

7. HANDLING AND STORAGE

7.1 HANDLING:

Technical Measures: The cases must be handled with care and open without damaging the content.
Assuring a good ventilation.
Grounding of the installations electrical workers and every present conductive object.

Preventive Measures: Avoiding direct contact with the product.
Manipulating with adequate protection (See Para 8).
Avoiding the accumulation of electrostatic charges.

Users' Informations: Manipulating and opening containers with attention.

7.2 STORAGE:

Technical Measures: Taking all the measures necessary in order to avoid the accidental spreading of the product outside in case of breach of the containers.

Preventive Measures: Maintain the containers sluces in limited explosives (following actual laws) place fresh, dry and ventilated to far away from flames and heat sources.
Stocking product in the original packs to a temperature comprised between +5°C and +30°C.

Not-Compatible Materials: Usually, oxidants and strong bases.

7.3 PARTICULAR USES:

Product to the single use concurred and subject to the conditions for which it has been conceived.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 EXPOSURE LIMITS: N. D.

8.2 EXPOSURE CONTROL.

8.2.1 PROFESSIONAL EXPOSURE CONTROL:

Technical Measures: Assuring a good ventilation at the work place.

Personal Protective Equipment

Respiratory Protection:: Protecting mask.

Hand Protection: Use protecting gloves in latex.

Eye Protection: Safety Glasses

Skin Protection: Suitable protecting and antistatic clothes.

Protection: Predisposing close to the workplace ocular showers and fountains.

Hygienical Measures: Immediately removing and washing with water the contaminated garments.
Not to eat, not drink, not to smoke during the manipulation of the product.

8.2.2 ATMOSPHERE EXPOSURE CONTROL: N. D.



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9. PHYSICAL/CHEMICAL PROPERTIES

9.1 GENERAL INFORMATIONS:

Appearance: Grey, rubber like solid

Odour: N. A.

9.2 IMPORTANT INFORMATIONS RELATED TO HEALTH, SAFETY AND ATMOSPHERE:

pH: N. D.
Boiling Point: N. A.
Flammability: > 200°C
Explosive Properties: N. D.
Comburent Properties: N. D.
Vapour Pressure: N. A.
Density: 1.6 – 1.7 g/cm³
Solubility: N. D.
Solubility in Water: 0.1 % at 100 °C
Ratio n-octanol/water: N. A.
Viscosity: N. D.
Vapour Density: N. A.
Evaporation Rate & Reference: N. A.

9.3 OTHERS INFORMATIONS: N. D.

10. STABILITY AND REACTIVITY DATA

Stability: Stable product in the normal conditions of use.

10.1 STABILITY INDICATOR TO AVOID:

Accidental hits on the product or on the packing and contact with free flames or exposure to high temperatures.
Storage in opened containers.
Explosives containing RDX may sensitise compositions containing azides.

10.2 STABILITY MATERIALS TO AVOID:

For chemically incompatible reason, the contact with acids, alkalis and highly reactive materials such as reducing agents or powerful oxidising agents.
Being physically incompatible with grit, nitrophenols or materials other than grit which sensitise the explosive or lead to uncontrollable reaction.
Combinations with phosphorus, ammonia, amines, metal powders, chlorates, mercury and mercury compounds or organic solvents are to be avoided.



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10.3 HAZARDOUS DECOMPOSITION PRODUCTS:

During the combustion or thermal decomposition (pyrolysis), toxic vapor development and smoke suffocating with carbon monoxide prevalence (CO+COx) and nitric oxides (NOx).

Additionally, the presence of aluminium in the explosive formulation leads to a possible long term incompatibility with moisture, due to the evolution of hydrogen gas resulting from the reaction between aluminium and water.

11. TOXICOLOGICAL INFORMATIONS

Acute Toxicity

Inhalation: N. A. in the corrected conditions of use. In case of combustion of the material see, between the others, Para 6 and Para 8 of the present card.

Ingestion: Noxious.
Call the doctor.

Skin Contact: N. A. in the corrected conditions of use. Moderately annoying for the skin.
In case of direct contact with the material see Para 6 and Para 8 of the present card.

Local Effects

Skin Contact: N. A. in the corrected conditions of use. Moderately annoying for the skin.
In case of direct contact with the material see Para 6 and Para 8 of the present card.

Eye Contact: N. A. in the corrected conditions of use. Annoying for the eyes.
In case of direct contact with the material see Para 6 and Para 8 of the present card.

Ingestion: Noxious.
Call the doctor.

Inhalation: N. A. in the corrected conditions of use. In case of combustion of the material see, between the others, Para 6 and Para 8 of the present card.

Sensibilization: N. A. in the corrected conditions of use. No effect awakens has been found on the base of real data.

Specific Effects: RDX is moderately toxic by inhalation or ingestion. It is readily absorbed through the skin and also causes irritation to the eyes, skin and mucous membranes.
Do not ingest or inhale any solid particles produced during the handling of PBXN-109.
Use plastic, rubber or latex gloves to minimise contact with the skin.
All skin wounds, however minor, should be covered with suitable dressings. Any skin contamination should be removed by washing.

»Others Informations: All the data deducted agreeing from bibliographical references and data published on similar products and are not also consistent to the enforced norms.

12. ECOLOGICAL INFORMATIONS

12.1 ECO-TOXICITY:

Acquatic-Atmosphere Effects: No calculated specific data, but on the base of its elements, the product, in case of dispersion and at high concentrations, is potentially toxic for the aquatic organisms/can provokes effects negatives for, in the long term.



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12.2 MOBILITY:

Final-Products

Destination: Air.

12.3 PERSISTENT & DEGRADATION:

No calculated specific data in case of accidental dispersion; the product however probably contains "difficultly biodegradable" elements. In agreement with the fixed criteria from Directive 91/325 the EEC and successive adaptations.

12.4 COMPONENT ANALYSIS - ECOTOXICITY - AQUATIC TOXICITY:

Kow: N. D.

BCF: N. D.

12.5 PBT: N. D.

12.6 OTHERS NOXIOUS EFFECTS:

The brought back information over are in agreement with reported bibliographical data and/or intense activities not published on similar chemicals and the communitarian norms.

13. DISPOSAL CONSIDERATIONS

The product must be disposed under the direct supervision of qualified staff, fortified of license and in agreement to the enforced laws in matter. The explosive material does not have to be stirred with ignition products during controlled digestion.

Product Waste

Forbidden: Avoiding or reducing lessened the formation of refusals.
Forbidden drainage in drain and water course.

Destruction
/ Disposal: Eliminating in centers of treatment authorized by means of incineration enforced the prescription of local law.

Contaminate *Packagings*

De-contaminate
/ Clean Up: N. A.

Destruction
/ Disposal: Destroying packaging as refusal in authorized centers of treatment by means of incineration.



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14. TRANSPORT INFORMATIONS

**P.S.' Category
(T.U.L.P.S.) Italy
Only:**

II*

IMO/IMDG (sea):

ONU Number: 0483
Class: 1
PSN: CYCLOTTRIMETHYLENETRINITRAMINE (CYCLONITE; HEXOGEN; RDX), DESENSITIZED
Packing Group: II
Aquatic Pollution: Yes
Class or Divisions: 1.1 D
EMS: F-B, S-Y
Packaging Instructions: P112 (b)
P112 (c)
Stowage
and Segregation: Category 10

RID/ADR (road):

ONU Number: 0483
Class: 1
PSN: CYCLOTTRIMETHYLENETRINITRAMINE (CYCLONITE; HEXOGEN; RDX), DESENSITIZED
Packing Group: II
Class or Divisions: 1.1 D
Packaging Instructions: P112 (b)
P112 (c)
Mixed
Packing Provisions: MP20

ICAO/IATA (air):

ONU Number: 0483
Class: 1
PSN: CYCLOTTRIMETHYLENETRINITRAMINE (CYCLONITE; HEXOGEN; RDX), DESENSITIZED
Packing Group: II
Class or Divisions: 1.1 D
Passenger and Cargo Pkg. Instr. Qty/Pkge:
Aircraft: N. A. N. A.
Cargo Aircraft Only: Pkg. Instr. N. A. Qty/Pkge: N. A.

15. REGULATORY INFORMATIONS

Label: Obligatory labeling of dangerous prepared.

CE Laws: Applicable.



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**Classification
/ Symbols:**

EXPLOSIVE (E)



R Phrases:

- 2 Risk of explosion by shock, friction, fire or other sources of ignition.
6 Explosive with or without contact with air.
7 May cause fire.
8 Contact with combustible material may cause fire.
9 Explosive when mixed with combustible material.
10 Flammable.
23/25 Toxic by inhalation and if swallowed.
33 Danger of cumulative effects.
44 Risk of explosion if heated under confinement.

S Phrases:

- 1/2 Keep locked up and out of the reach of children.
3/9/14/49 Keep only in the original container in a cool, well-ventilated place away from oxidants and bases.
4 Keep away from living quarters.
13 Keep away from food, drink and animal feedingstuffs.
15 Keep away from heat.
16 Keep away from sources of ignition - No smoking.
17 Keep away from combustible material.
18 Handle and open container with care.
20/21 When using do not eat, drink or smoke.
22 Do not breathe dust.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
27 Take off immediately all contaminated clothing.
28 After contact with skin, wash immediately with plenty of water.
29 Do not empty into drains.
33 Take precautionary measures against static discharges.
35 This material and its container must be disposed of in a safe way.
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
40 To clean the floor and all objects contaminated by this material use useful objects (sparkproof or wood).
41 In case of fire and/or explosion do not breathe fumes.
45 In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).
51 Use only in well-ventilated areas.
56 Dispose of this material and its container at hazardous or special waste collection point.
57 Use appropriate containment to avoid environmental contamination.
59 Refer to manufacturer/supplier for information on recovery/recycling.
60 This material and its container must be disposed of as hazardous waste.



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Avoid release to the environment. Refer to special instructions/safety data sheet.

16. OTHER INFORMATIONS

*Complete others (R)
phrases indicated to
Para 2 & 3:*

R15	Contact with water liberates extremely flammable gases.
R16	Explosive when mixed with oxidising substances.
R17	Spontaneously flammable in air.

Always holding detonators separated from the explosive till the moment of the use (adding in heading D.M of the 07/09/2002).

Legend:

N. A.: Not Applicable.
N. D.: Not Available.

Issue:

This card has been issued (ref. to the date up to right of every page).

Material Safety Data Sheet is in compliance with the Regulations 1907/2006 (Att. III).

User's Advices

THIS MSDS COMPLETE THE TECHNICAL CARD ON USE OF THE PRODUCT, BUT IT DOESN'T REPLACE IT.

THE CONTAINED INFORMATION ARE BASED ON THE CONCERNING ACQUAINTANCES THE PRODUCT IN OBJECT TO THE DATE OF COMPILATION OF THE CARD.

THE CARD NOT PANTRY IN SOME CASE THE USER FROM THE ACQUAINTANCE AND THE APPLICATION OF EVERY REGULATION PERTINENT TO ITS ACTIVITY.

THE PRESCRIPTIONS PRESCRIBED MENTIONED HAVE SIMPLY THE SCOPE TO HELP THE ADDRESSEE TO SATISFY THE OBLIGATION THAT COMPETES TO IT DURING THE USE OF THE DANGEROUS PRODUCT AND NOT OF WHICH IT IS THE ONLY RESPONSIBLE.

1. IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY

Product Name	Explosive PBXN-110
Intended Use	PBXN-110 is a cast-cure polymer bonded secondary explosive intended for Military use as the explosive filling contained within a sealed warhead. This Safety Data Sheet is applicable to samples of PBXN-110 which have been supplied for evaluation, testing and analysis of the explosive material PBXN-110.
Company	RWM Italia Munitions S.r.l.
Address	Via Industriale 8/d, I - 25016 Ghedi (BS), Italy
Telephone	+39 030 90431
Email Address	sds.support@rwm-italia.com
Emergency Telephone	+39 0781 72801

2. HAZARDS IDENTIFICATION**2.1. Classification**

Regulation (EC) No 1272/2008	Explosive Division 1.1
Directive 1999/45/EC	HMX, the main ingredient in PBXN-110, is not classified in Annex I of Directive 67/548/EC. However, using the principles contained within Directive 67/548/EC, PBXN-110 would be classified as Explosive

2.2. Label elements

Pictogram



Signal Word	Danger
Hazard Statement	H201 Explosive; mass explosion hazard
Precautionary Statements Prevention	P210 Keep away from heat, sparks, open flames, hot surfaces. No smoking P250 Do not subject to grinding, impact, shock or friction
Precautionary Statements Response	P370 + P380 In case of fire, evacuate area P372 Explosion risk in case of fire P373 DO NOT fight fire when fire reaches explosives
Precautionary Statement Storage	P401 Store in a secure explosives magazine in accordance with National regulations
Precautionary Statement Disposal	P501 Dispose of contents/container in accordance with Local regulations for disposal of explosives and explosive contaminated waste

Hazard Symbol	E, Xn
R-Phrases	R2 Risk of explosion by shock, friction, fire or other sources of ignition R5 Heating may cause an explosion R20/21/22 Harmful by inhalation, in contact with skin and if swallowed
S-Phrases	S15/16 Keep away from heat and sources of ignition S16 Keep away from sources of ignition - No smoking S18 Handle and open container with care S22 Do not breathe dust S24/25 Avoid contact with skin and eyes S28 After contact with skin wash immediately with plenty of soap and water S35 This material and its container must be disposed of in a safe way S41 In case of fire and/or explosion do not breathe fumes

2.3. Other hazards


PBT or vPvB	Not applicable
Health	HMX, the main ingredient in PBXN-110, is considered harmful and may be absorbed through the skin. It causes slight irritation to the eyes, skin and mucous membranes.

3. COMPOSITION/INFORMATION ON INGREDIENTS

PBXN-110 is a solid material that contains the solid explosive material, HMX, encapsulated in an inert polyurethane rubber.







Additionally, isodecyl pelargonate, plasticiser, and lecithin, wetting agent, are added to the formulation to improve the physical characteristics of the material.

The composition of PBXN-110 is:

Ingredient	% Weight	CAS No.	EC No.	Classification	Hazards
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	87.0	2691-41-0	220-260-0	 E	H201 R2
Polyurethane rubber	6.5	-	-	Not classified	No significant hazards
8-Methylnonyl nonan-1-oate (isodecyl Pelargonate)	5.8	109-32-0	203-665-7	Not classified	No significant hazards
Lecithin	0.7	8002-43-5	232-307-2	Not classified	No significant hazards

The polyurethane rubber is formed in situ by the reaction of hydroxyl terminated polybutadiene with isophorone diisocyanate. The formation of the polyurethane is catalysed by dibutyltin dilaurate and an antioxidant is also added to maintain the properties of the polyurethane.

The materials used in the manufacture the polyurethane rubber, expressed as percentages of the total PBXN-110 formulation, are:

Ingredient	% Weight	CAS No.	EC No.	Classification	Hazards	
Hydroxyl terminated polybutadiene	5.8	69102-90-5	-	Not classified	No significant hazards	
3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate (Isophorone Diisocyanate)	0.6	4098-71-9	223-861-6		T	H315, H317, H319, H331, H334, H335, H411 R23, R36/37/38, R42/43, R51/53
						
					N	
2,2',6,6'-Tetra-tert-butyl-4,4'-methylenediphenol (Antioxidant)	0.05	118-82-1	204-279-1		XI	H315, H319, H335 R36/37/38
Dibutyltin dilaurate (Catalyst)	0.01	77-58-7	201-039-8		T+	H302, H315, H319, H330, H401 R22, R26, R36/38, R50/53
					N	

The reaction of the isophorone diisocyanate with the hydroxyl terminated polybutadiene, to form the polyurethane rubber, removes any significant presence of the isophorone diisocyanate from the formulation.

Similarly, the encapsulating nature of the in situ formation of the polyurethane rubber, significantly reduces the extent to which personnel are exposed to the harmful properties of any of the constituent ingredient materials given above.

However, when handling PBXN-110, there is the possibility of contact with small quantities of crystals of HMX that may be shed from the solid material.

For the full text of all the Hazard Statements and R-Phrases mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1. Description of first aid measures

Skin contact	Immediately flush the contaminated skin with soap and plenty of water. If irritation persists after flushing, get medical attention. If material penetrates the clothing, immediately remove the clothing, flush the skin with water and then wash the skin with soap and water. If irritation persists after washing, get medical attention.
Eye contact	Immediately wash the eyes with large amounts of water for at least 15 minutes, occasionally lifting the lower and upper lids. Get medical attention immediately.
Inhalation	Move the exposed person to fresh air at once. If breathing has stopped, perform artificial resuscitation. Keep the affected person warm and at rest. Get medical attention as soon as possible.
Ingestion	Get medical attention immediately.

4.2. Most important symptoms and effects, acute and delayed

HMX, the main ingredient in PBXN-110, is considered harmful and may be absorbed through the skin. It causes slight irritation to the eyes, skin and mucous membranes and continued skin contact may cause sensitisation.

Information regarding the toxicity of HMX is limited. Convulsions and loss of consciousness have been reported from exposure to RDX dust, but not from HMX.

5. FIRE FIGHTING MEASURES

5.1. Extinguishing media

Large quantities of water

5.2. Special hazards arising from the mixture

In the event of a fire involving PBXN-110:

- There is a high risk of an explosion occurring when fire reaches the explosive
- Acrid smoke and irritating, toxic fumes will be emitted. The gases evolved will include carbon monoxide, oxides of nitrogen and possibly, traces of hydrogen cyanide. It is therefore necessary to avoid inhaling the smoke emitted during burning.

5.3. Advice for fire fighters

In the event of a fire involving PBXN-110:

- Do not attempt to extinguish the fire, due to the risk of an explosion occurring.
- Immediately evacuate the area, to an upwind position in order to avoid breathing smoke and fumes.
- Only if possible, fight the fire from a protected position using water.
- Wear self contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

PBXN-110 is supplied as cured, solid, pieces of material. Gross spillage, or significant accidental release, of the material is unlikely to occur.

Remedial action in the event of a spillage, or accidentally release, is simply that of picking up the pieces of PBXN-110 and removing any explosive contamination from the area of the spill.

6.1. Personal precautions, protective equipment and emergency procedures

- | | |
|-----------------------------|---|
| For non-emergency personnel | Wear suitable gloves, see Section 8.2, and dust mask if quantities of dust are present in the spillage.
Flame retardant clothing.
Remove any ignition sources nearby. |
| For emergency responders | Wear suitable gloves, see Section 8.2, and dust mask if quantities of dust are present in the spillage.
Flame retardant clothing.
Remove any ignition sources nearby. |

6.2. Environmental precautions

Do not sweep spilled material, or any dust formed as a result of the spillage, into drains

6.3. Methods and material for containment and cleaning up

- Clean up spill immediately using a soft bristle brush and a conductive rubber or plastic shovel.
- Do not wash away into drains or sewer.
- Place recovered material in a properly labelled storage container and store in an approved explosives storage magazine for further disposal by burning under controlled conditions, see Section 13.1.
- Any contamination of the spilled PBXN-110 with materials such as dirt, sand, grit or metal particles will increase the impact and friction sensitiveness of the PBXN-110.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

- | | |
|-----------------------|--|
| Preventative Measures | The boxes containing the PBXN-110 must be handled with care and not dropped.
Care must also be taken when opening the boxes to prevent damage occurring to the contents.
Good ventilation is required.
Generation, and accumulation, of electrostatic charges on personnel and equipment must be avoided by the use of reliable earthing of equipment and personnel.
Keep away from heat, out of direct sunlight, and other sources of ignition including combustible materials. |
| User Information | Risk of explosion by shock, friction, fire or other sources of ignition.
Handle with care.
No smoking. |

Occupational Health	<p>When handling PBXN-110, there is the possibility of contact with small quantities of HMX crystals that may be shed from the solid material.</p> <p>Information regarding the toxicity of HMX is limited. Due to the similar chemical nature of HMX with RDX, it is prudent to consider HMX as harmful.</p> <p>Do not ingest or inhale any solid particles produced during the handling of PBXN-110.</p> <p>Use disposable plastic, rubber or latex gloves to minimise contact with the skin. Any skin contamination should be removed by washing.</p> <p>Do not eat or drink whilst handling PBXN-110.</p> <p>Wash hands, with soap and water, after handling PBXN-110 and remove any contaminated PPE and clothing before eating.</p>
Incompatible Materials	<p>All explosives are regarded as being chemically incompatible with acids, alkalis and highly reactive materials such as reducing agents or powerful oxidising agents.</p> <p>Similarly, explosives are regarded as being physically incompatible with grit, nitrophenols or materials other than grit which sensitise the explosive or lead to uncontrollable reaction.</p> <p>Combinations with phosphorus, ammonia, amines, metal powders, chlorates, mercury and mercury compounds or organic solvents are to be avoided.</p>

7.2. Conditions for safe storage, including any incompatibilities

Preventative Measures	<p>PBXN-110 is classified as a 1.1D explosive and must be stored in accordance with local and national regulations applicable to this class of explosive.</p> <p>Measures should be taken to avoid the generation, and accumulation, of electrostatic charges.</p> <p>Bare samples of explosive should be wrapped in waxed paper and then conductive polythene, sheet or bag.</p> <p>The recommended outer packaging is a wooden, or cardboard box with "internal furniture" such as corrugated cardboard or felt to prevent packed items from moving inside the box .</p> <p>Store in closed containers, between ambient and 30 °C, in a suitably secure magazine.</p>
Incompatible Materials	<p>All explosives are regarded as being chemically incompatible with acids, alkalis and highly reactive materials such as reducing agents or powerful oxidising agents.</p> <p>Similarly, explosives are regarded as being physically incompatible with grit, nitrophenols or materials other than grit which sensitise the explosive or lead to uncontrollable reaction.</p> <p>Combinations with phosphorus, ammonia, amines, metal powders, chlorates, mercury and mercury compounds or organic solvents are to be avoided.</p>

7.3. Specific end use

Samples of PBXN-110 are supplied for evaluation, testing and analysis of the explosive material by personnel who are qualified and suitably trained in the handling of military high explosives.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational Exposure Limit	PBXN-110 contains no materials with a currently known occupational exposure limit.
Biological Limit Values	PBXN-110 contains no materials with a currently known biological limit value.
Applicable Occupational Exposure Limits and/or Biological Limits for Atmospheric Contaminants	Not applicable. No air contaminants are formed when using the PBXN-110 as intended.

8.2. Exposure Controls

Engineering Controls	Generation, and accumulation, of electrostatic charges on personnel and equipment must be avoided by the use of the reliable earthing of equipment and personnel. Provide good ventilation.
Industrial Hygiene	No eating, drinking or smoking during use. Do not ingest or inhale any solid particles produced during the handling of PBXN-110.
Personal Protective Equipment	Eye Protection Safety glasses to be worn. Goggles may be necessary if significant amounts of HMX crystals are present during use. Skin Protection: All skin wounds, however minor, should be covered with suitable dressings. Any skin contamination should be removed immediately by washing. Work clothing should be antistatic, such as cotton, and flame retardant. Clothing which becomes significantly contaminated should be removed and replaced. Hand Protection: Wear plastic, rubber or latex gloves. Disposable gloves are recommended in order to minimise cross contamination with the explosive material. Footwear: Anti-static or conductive footwear. Respiratory Protection: Dust mask will be necessary if noticeable amounts of HMX crystals are present during use.
Environmental Exposure Controls	Not required during normal handling and use of PBXN-110.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	White to cream coloured rubbery solid
Odour	No characteristic odour
pH	Not applicable
Melting Point/Freezing Point	Not applicable
Boiling Point	Not applicable
Flash Point	Not applicable
Evaporation Rate	Not applicable
Flammability (solid, gas)	Not applicable
Upper/Lower Flammability or Explosive Limits	Not applicable
Vapour Pressure	Not applicable
Vapour Density	Not applicable
Density	1.66 g/cm ³
Solubilities	Water, < 0.1 % at 100 °C HMX is soluble in acetone, cyclohexanone and other organic solvents
Partition Coefficient n-octanol/water	Not applicable
Auto-Ignition Temperature	231 °C
Decomposition Temperature	287 °C
Viscosity	Not applicable
Explosive Properties	Sensitiveness to impact, BAM, 14.8 J Sensitiveness to friction, BAM, > 353 N Sensitiveness to electric spark, no ignitions at 6.8 J Detonation Velocity, 8240 m/s LSGT, 178 cards
Oxidizing properties	Not applicable

9.2. Other Information

Not applicable

10. STABILITY AND REACTIVITY

10.1. Reactivity

Impact, friction, electrostatic spark, open fire or other sources of ignition can cause explosion.

Burning of large quantities can lead to explosion.

10.2. Chemical stability

Test method:

STANAG 4556, Edition 1, "Explosives: Vacuum Stability Test", Annex A, Transducer Method, Procedure 2B, 48 hours at 100 °C, 5 gram sample

Test results:

PBXN-110 0.4 cm³

Using the above test method, a maximum figure of 5.0 cm³ is generally regarded as being the criteria for considering an HMX based secondary explosive to be "chemically stable".

Therefore, PBXN-110 exhibits satisfactory chemical stability.

10.3. Possibility of hazardous reactions

Heating under confinement can lead to explosion.

When subjected to prolonged heating, the risk of explosion can exist at temperatures around 150 °C, well below the auto-ignition temperature.

This risk increases with degree of confinement and sample size.

10.4. Conditions to avoid

Keep away from heat, sparks, open flames, hot surfaces. No smoking

Do not subject to grinding, impact, shock or friction.

Do not store in open containers.

10.5. Incompatible materials

- i. All explosives are regarded as being chemically incompatible with acids, alkalis and highly reactive materials such as reducing agents or powerful oxidising agents.
- ii. Similarly, explosives are regarded as being physically incompatible with grit, nitrophenols or materials other than grit which sensitise the explosive or lead to uncontrollable reaction.
- iii. Combinations with phosphorus, ammonia, amines, metal powders, chlorates, mercury and mercury compounds or organic solvents are to be avoided.

10.6. Hazardous decomposition products

During combustion or thermal decomposition, acrid smoke and irritating, toxic fumes will be emitted. The gases evolved will include carbon monoxide, oxides of nitrogen and possibly, traces of hydrogen cyanide.

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

The principal health risk arises from the presence of HMX in the PBXN-110 formulation:

Toxicity	Information regarding the toxicity of HMX is limited and human health effects have not been reported. HMX, oral mice, LD ₅₀ : 1500 mg/kg HMX, oral rat, LD ₅₀ : 6200 mg/kg On the basis of the rat oral LD ₅₀ , HMX should be considered only slightly toxic to humans and therefore regarded as harmful. However HMX may exhibit similar effects to those of RDX.
Skin	Slight irritation. HMX may be absorbed through the skin, possible route for uptake of HMX.
Eyes	Slight irritation to the eyes.
Inhalation	Slight irritation to the mucous membranes. Possible route for uptake of HMX.
Sensitisation	No data available
Carcinogenicity	No data available
Mutagenicity	No data available
Toxicity for reproduction	No data available

11.2. Other Information

Currently no additional information is available.

12. ECOLOGICAL INFORMATION

HMX is the most significant ingredient in PBXN-110 and the environmental impact of PBXN-110 may be assessed by considering the ecological information related to HMX.

12.1. Toxicity

No adverse effects of exposure to 32 mg/l HMX were observed among four species of algae, four species of freshwater and four species of invertebrates.

The 7-day old fry of the fathead minnow were the only life stage or species acutely affected.

Based on an application factor of 0.05 and a 96-hour LC₅₀ for the most sensitive aquatic organism (7-day old fry of the fathead minnow) tested (15 mg/l), a water quality criterion of 0.75 mg/l has been suggested for the protection of fresh-water aquatic life with an adequate margin of safety.

12.2. Persistence and degradability

HMX is persistent in the environment, with little transport from water to other media.

Volatilisation, sorption, and bioconcentration are not expected to be important.

The primary transformation process is photolysis, with a half-life of about 17 days in river water.

Biodegradation may occur in waste water and in water enriched with nutrients under aerobic and anaerobic conditions, but is not expected to be significant in ambient waters.

12.3. Bioaccumulative potential

Bioaccumulation of HMX is not expected to be significant, based on bioconcentration and elimination studies on RDX in several species.

12.4. Mobility in soil

HMX is likely to move from soil into groundwater, particularly in sandy soils. For most soils, however, the movement of HMX into groundwater is expected to be slow.

Bacteria in the soil are not expected to break down HMX to any large extent. Based on data for RDX and HMX transformations in water, microbial degradation does not proceed rapidly and HMX may be persistent in soil and sediments.

12.5. Results of PBT and vPvB assessment

No data currently available.

12.6. Other adverse effects

No data currently available.

13. DISPOSAL CONSIDERATIONS

The explosive PBXN-110 must be disposed of under the direct supervision of suitably qualified staff, in accordance with local, state and national legislation.

13.1. Disposal methods

PBXN-110	The recommended method of destruction is by controlled, remotely operated burning: <ol style="list-style-type: none">In general, waste PBXN-110, in pieces not exceeding 37 mm in any dimension, should be placed, in a single layer, on a bed of wood shavings or other suitable combustible material. The prepared bed should then be wetted with a fuel, such as diesel or kerosene, and ignited remotely.During the burning, acrid smoke and irritating, toxic fumes will be emitted. The gases evolved will include carbon monoxide, oxides of nitrogen and possibly, traces of hydrogen cyanide. It is therefore necessary to avoid inhaling the smoke emitted during burning.The primary detrimental effect upon the environment is the release into the atmosphere of "greenhouse gases" and local authority approval is required for burning operations. Alternative methods of destruction may be used if authorised by the user establishment.
Packaging	Packaging must be considered as explosive contaminated waste and disposed of accordingly.

14. TRANSPORT INFORMATION

14.1. UN number

0484

14.2. UN proper shipping name

CYCLOTETRAMETHYLENE-TETRANITRAMINE (HMX; OCTOGEN), DESENSITIZED

14.3. Transport hazard class

1.1 D

14.4. Packing instruction

P112(b), P112(c)

14.5. Transport mode

Road (ADR)	Environmental Hazards:	No
	Mixed Packing Provisions:	MP20
Rail (RID)	Environmental Hazards:	No
	Mixed Packing Provisions:	MP20
Sea (IMDG)	Aquatic Pollutant:	No
	EMS:	F-B, S-Y
	Stowage and Segregation:	Category 10
	Transport according to Annex II of MARPOL 73/78 and the IBC Code:	Not applicable
Inland Waterways (ADN)	Environmental Hazards:	No
	Equipment Required:	PP
Air (ICAO)	Environmental Hazards:	No
	Passenger and Cargo Aircraft:	Not applicable
	Cargo Aircraft Only:	Not applicable

15. REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation

This safety datasheet has been compiled in accordance with the requirements of Regulation (EC) No. 1907/2006.

In accordance with Regulation (EC) No 1272/2008 and UN Recommendations on the Transport of Dangerous Goods, Model Regulations, PBXN-110 has been classified as "Explosive Division 1.1 D" and shall be labelled:



15.2. Evaluation of Chemical Safety:

Test method:

STANAG 4556, Edition 1, "Explosives: Vacuum Stability Test", Annex A, Transducer Method, Procedure 2B, 48 hours at 100 °C, 5 gram sample

Test results:

PBXN-110 0.4 cm³

Using the above test method, a maximum figure of 5.0 cm³ is generally regarded as being the criteria for considering an HMX based secondary explosive to be "chemically stable".

Therefore, PBXN-110 exhibits satisfactory chemical stability.

16. OTHER INFORMATION

16.1. Toxicological references

"Toxicological Profile for HMX", prepared by Sciences International, Inc. for the U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry, September 1997.

"Acute Toxicity of 1,3,5,7-tetranitro-octahydro-1,3,5,7-tetrazocine (HMX) to Aquatic Organisms", R. E. Bentley, G. A. Leblanc, T. A. Hollister and B. H. Sleight III, April 1977.

16.2. R-phrases, Hazard statements, S-phrases and Precautionary statements

R-phrases

R2	Risk of explosion by shock, friction, fire or other sources of ignition
R5	Heating may cause an explosion
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed
R22	Harmful if swallowed
R23	Toxic by inhalation
R26	Very toxic by inhalation
R36/38	Irritating to eyes and skin
R36/37/38	Irritating to eyes, respiratory system and skin
R42/43	May cause sensitisation by inhalation and skin contact
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Hazard statements

H201	Explosive; mass explosion hazard
H302	Toxic if swallowed
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H330	Fatal if inhaled
H331	Harmful if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation
H401	Very toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects

S-phrases

S15/16	Keep away from heat and sources of ignition
S16	Keep away from sources of ignition - No smoking
S18	Handle and open container with care
S22	Do not breathe dust
S24/25	Avoid contact with skin and eyes
S28	After contact with skin wash immediately with plenty of soap and water
S35	This material and its container must be disposed of in a safe way
S41	In case of fire and/or explosion do not breathe fumes

Precautionary statements

- P210 Keep away from heat, sparks, open flames, hot surfaces. No smoking
P250 Do not subject to grinding, impact, shock or friction
P370 + P380 In case of fire, evacuate area
P372 Explosion risk in case of fire
P373 DO NOT fight fire when fire reaches explosives
P401 Store in a secure explosives magazine in accordance with National regulations
P501 Dispose of contents/container in accordance with Local regulations for disposal of explosives and explosive contaminated waste

The information contained within this Safety Data Sheet is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. RWM Italia Munitions S.r.l. shall not be held liable for any damage resulting from handling or from contact with PBXN-110.