



Double Base Powders - Ramshot
SAFETY DATA SHEET
March 2022

The following Smokeless Propellant
is distributed by Ramshot Powders

Zip® (**EX-2018032044**)

1.4C EX Approvals in bold parenthesis

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SECTION 1: IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY

1.1 Product identifier:

Product designations:

C1420

DOUBLE BASE PROPELLANT POWDER

Applicable to:

1.2 Relevant identified uses:

Uses advised against:

PROPELLANT POWDER FOR AMMUNITIONS

NOT APPLICABLE

1.3 Information concerning the supplier of FDS:

PB CLERMONT S.A.

Rue de Clermont, 176, B – 4480 ENGIS - Belgium

☎ : +32.4.273.82.82

☎ : +32.4.273.82.50

E-mail : qse_mail@eurenco.com

1.4 Emergency telephone number (Centre Antipoisons) :

☎ : +32.70.245.245 (Belgium)

SECTION 2: HAZARD IDENTIFICATION

2.1 Classification

Physical dangers: Explosive - Division 1.3 (H203) or 1.1 (H201) according to packaging

If presence of naked active material apart from its pyrotechnical use:

Dangers to human health: STOT (repeated exposure): cat.2, H373
 Acute toxicity (by inhalation) cat.2; H330
 Acute toxicity (by ingestion) cat.2; H300
 Acute toxicity (via skin contact) cat.1; H310

Dangers to the environment: Chronic aquatic toxicity cat.2; H411

2.2 Label elements in accordance with (CE) regulations 1272/2008

Danger pictograms:



Warning mention: DANGER

Danger mentions:

H203: Explosive; fire, blast or projection hazard.

Cautionary advice:

Accident prevention:

P210 : Keep away from heat/sparks/open flames/hot surfaces.

P234 : Keep only in original packaging.

P250 : Avoid shock or friction

Intervention:

P372 : Risk of explosion in case of fire.

P373 : Do not fight fire when fire has reached explosives.

P380 : In case of fire: Evacuate area.

2.3 Other hazards

Explosive mixture not classified PBT/vPvB.

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance: not applicable

3.2 Mixture

CAS N°	EC N°	Index N°	REACH record N°	%	Name	Classification according to (CE) regulation N° 1272/2008 (CLP)
55-63-0	200-240-8	603-034-00-X	01-2119488893-18-0000	5 - 40	Nitroglycerine	Unst. Expl. H200 Acute Tox. 2 H330 Acute Tox. 1 H310 Acute Tox. 2 H300 STOT RE2 H373 Aquatic chronic 2 H411
9004-70-0		603-037-00-6	-	Min. 80	Nitrocellulose	Expl. 1.1 H201
122-39-4	204-539-4	612-026-00-5	01-2119488966-13-0000	1	Diphenylamine	Acute Tox. 3 H331 Acute Tox. 3 H311 Acute Tox. 3 H301 STOT RE 2 H373 Aquatic Acute 1 H400 Aquatic Chronic 1 H410

SECTION 4: FIRST AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES:

Inhalation:

- Carry the victim outside.
- If the victim is not breathing, carry out artificial respiration.
- If there is difficulty in breathing, check that airways are not obstructed, give oxygen and monitor the victim.
- In case of cardiac arrest, immediately carry out cardiopulmonary reanimation (CPR).
- Keep the victim warm and resting.
- Immediately consult a doctor.

Skin contact:

- Immediately wash the skin with copious soap and water and remove contaminated clothing.
- Risk of harmful doses via skin absorption.
- Call a doctor in case of discomfort.
- Wash clothing before re-use.
- If clothing is sent to a laundry, inform the person in charge of the dangerous nature of the contaminants.

Eye contact:

- Do not rub eyes.
- Immediately rinse with copious amounts of water for at least 15 minutes.
- Remove contact lenses if victim has them and fully open eyelids.
- In case of eye irritation, call a doctor.

Ingestion:

- Carefully rinse the mouth with water. If the victim is conscious, have them drink a lot of water.
- DO NOT provoke vomiting.
- Immediately consult a doctor.
- Do not administer anything orally if the victim is unconscious or having convulsions.

4.2 Most important symptoms and effects, both acute and delayed

Eye irritation. Symptoms may include itching, burning sensations, redness and lacrimation. Skin contact may produce pain and redness. Ingestion may produce gastro-intestinal irritation, nausea, vomiting and diarrhoea. A high concentration of dust can irritate the throat and respiratory system and induce coughing. The traces of nitro-glycerine contained in the product may lead to a drop in blood pressure, headaches, cyanosis and mental confusion.

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4.3 Indication of any immediate medical attention and special treatment needed

Give general assistance and treat symptoms. Keep the victim under observation.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing methods:	A large volume of water must be rapidly applied via an automatic sprinkler system or fire hose.
Inappropriate extinguishing media:	Do not use a water jet for extinguishing since this may extend the fire.
5.2 Specific hazards arising from the mixture:	Vapour / toxic gases may form in cases of fire. The combustion products vary depending on the fire conditions and other inflammable substances present. The principal products are carbon dioxide and nitrogen oxide. Under certain conditions, methane, carbon monoxide, aldehydes, irritant carboxylic acids and hydrocyanic acids may be formed.
5.3 Advice for firefighters:	In case of fire, wear portable breathing gear and full protection, including waterproof boots, gloves, safety helmet and clothing impervious to chemical substances.
Firefighting equipment and advice:	Fires involving smokeless propellants MUST NOT be fought, unless the means of extinguishing can be administered from a well-protected place (e.g. from behind a beam or barrier) and well away from the point of the fire.
Specific methods:	Evacuate personnel to a safe place in accordance with the pre-established evacuation plan. Apply classical firefighting methods and take into consideration the dangers linked to the materials involved.
General fire dangers:	Explosive; fire, blast or projection hazard.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Sprinkle the spilt product before collecting it and maintaining it moist. Eliminate all sources of ignition. Do not use tools likely to cause sparks. Wear appropriate personal protection equipment and non-flammable or fire resistant clothing during collection. Avoid inhaling dusts. Use a gas mask in case of high risk of exposure to dust / smoke. Do not touch damaged recipients or spilt product without wearing appropriate protective clothing. Ensure that there is appropriate ventilation.

6.2 Environmental precautions

Avoid contamination of soil and water.

6.3 Methods and material for containment and cleaning up

Avoid airborne dust dispersion. Immediate collect the spilled product using non-spark producing accessories. Sprinkle the spilt product before collection and maintain it moist until it is ready to be eliminated. Avoid contamination of water bodies during cleaning and elimination. Collect dusts using a vacuum cleaner fitted with a HEPA filter. In cases of spillage of large quantities, sweep the product, collect with shovels, or vacuum and collect in an appropriate container for elimination. In case of spillage in water, if possible, remove intact recipients from the water. Carefully clean contaminated surfaces in order to eliminate residual contamination. Never replace the spilt product into its original recipient with a view to re-use. Correctly label the new recipient.

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SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid mechanical shocks. Avoid exposure to sun's rays or artificial ultraviolet radiation. Reduce the accumulation of dusts to the minimum. Foresee ventilation by appropriate means. Avoid dust inhalation. Avoid all contact with eyes, skin and clothing. Do not taste or ingest. Wear appropriate personal protective equipment. Respect industrial hygiene best practice.

The powder contains stabilisers, and in good storage conditions, deteriorates very slowly. Old stocks of powder must be checked at regular intervals to locate any deterioration. The powder when deteriorating produces an acid odour and may emit brownish red fumes. Eliminate the powder that has begun to deteriorate, for example by controlled combustion of small quantities (the products must be submerged in water until they are totally burnt).

The powder must not be exposed to excessive heat since this accelerates deterioration. The deterioration creates an acidity which accelerates an additional reaction and it is noted that the heat generated by this reaction leads to spontaneous combustion.

7.2 Conditions for safe storage conditions, including any incompatibilities

Conserve in its original recipient. Maintain the recipient closed and airtight.

Keep in a cool, dry well ventilated location away from all sources of ignition.

Keep at a distance from incompatible materials (see section 10).

The packages must be stacked in a stable manner. Storage in crates or drums must be at a maximum height of no more than 1.6 m above floor level.

7.3 Specific end use

The use identified for this product are given in section 1.2.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Limits of professional exposure

BELGIUM						
	CAS N°	Limit value 8 hours		Short term limit value (15 min. unless contrary specifications)		Legal basis
		ppm	mg/m ³	ppm	mg/m ³	
NGL	55-63-0	0.05	0.47			
DPA	122-39-4		10			
GERMANY						
	CAS N°	Limit value 8 hours		Short term limit value (15 min. unless contrary specifications)		Legal basis
		ppm	mg/m ³	ppm	mg/m ³	
NGL	55-63-0	0.01	0.094	0.01	0.094	
DPA	122-39-4		5		10	
FRANCE						
	CAS N°	Limit value 8 hours		Short term limit value (15 min. unless contrary specifications)		Legal basis
		ppm	mg/m ³	ppm	mg/m ³	
NGL	55-63-0	0.1	1			
DPA	122-39-4		10			

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Biological limit values

Diphenylamine: DL50 oral (rat): 1.120 mg/kg
 Nitroglycerine: DL50 oral (rat): 105 mg/kg

8.2 Exposure controls

Monitor exposure according to standard EN 689.
 Ventilation by local extraction is recommended in case of abundant dust formation. Otherwise, use a general extraction ventilation.
 Installation of emergency eye washes and showers is recommended.

Protection of eyes / face:	Wear safety glasses with lateral protection (or goggles).
Skin protection:	Wear appropriate fire resistant clothing, resistant to chemical substances.
Breathing protection:	Use an approved gas mask fitted with a particle filter (P3) in case of risk of exposure to dusts that exceeds the exposure limits.
General remarks on hygiene:	Always use good personal hygiene measures, such as hand washing after manipulation, before eating, drinking and / smoking. Regularly wash work clothing and protection equipment in order to eliminate contaminants.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:	Spherical or laminated grains (grey colour): Web: 0.10-0.70 mm
Odour:	Odourless
Olfactive level:	NA
pH:	NA
Fusion point / freezing point:	NA
Initial boiling point and boiling range:	NA
Flash point:	NA
Evaporation rate:	NA
Inflammability:	NA
Upper / lower limits of inflammability or explosivity:	NA
Vapour pressure:	NA
Vapour density:	NA
Relative density:	Apparent density: 0.5-1 (g/cc)
Solubility:	Soluble in ketones and acetates
n-octanol/water distribution coefficient:	Nitro-glycerine: Log pow = 1.88
Decomposition temperature:	Decomposition is measurable above 50 °C (122 °F)
Viscosity:	NA
Explosive properties:	
→ Potential:	880-1300 cal/g
→ Self-ignition temperature by progressive heating of 5 °C/min.:	190-200 °C (374-392 °F)
→ Self-ignition temperature:	> 160 °C
→ Shock sensitivity (EN 13631-4):	> 3 J
→ Friction sensitivity (EN 13631-3):	> 120 N
→ Sensitivity to electrostatic energy (EN 13938-2):	> 5 J
→ Combustion speed in ambient conditions (EN 13938-4):	< 98 mm/s
→ Thermal stability at 75 °C (EN 13631-2):	No reaction

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→ Deflagration - detonation transition (EN 13938-3): Oxidising properties: 9.2 Other information	> 5 cm No The product may explode in case of ignition and confinement.
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SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:	Possibility of ignition in cases of mechanical shock and/or friction. Possibility of ignition in case of static discharge. The product may explode in case of ignition and confinement.
10.2 Chemical stability:	Product unstable in case of exposure to heat source, sun's rays or artificial ultraviolet radiation.
10.3 Possibility of hazardous reactions:	No dangerous polymerization.
10.4 Conditions to avoid:	Contact with incompatible materials. Direct sunlight, artificial ultraviolet, flames and heat.
10.5 Incompatible materials:	Strong acids, alkalis, oxidising agents and amines.
10.6 Hazardous decomposition products:	Carbon monoxide, carbon dioxide, nitrogen oxide. Decomposition is measurable above 50 °C (122 °F).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects	
Inhalation:	The dust may irritate the respiratory system.
Skin contact:	Easily penetrates skin and gives rise to headaches. Can be harmful through skin contact. Can provoke skin irritation. Can provoke skin allergies.
Eye contact:	Dust can be an irritant.
Ingestion:	Toxic / deadly in case of ingestion.
Symptoms linked to physical, chemical and toxicological characteristics	Eye contact can provoke irritation, itching, burning sensations, redness and lacrimation. Skin contact may produce pain and redness. Ingestion may produce gastro-intestinal irritation, nausea, vomiting and diarrhoea. A high concentration of dust can irritate the throat and respiratory system and induce coughing. The traces of nitro-glycerine contained in the product may lead to a drop in blood pressure, headaches, cyanosis and mental confusion.

Acute toxicity: The mixture has been classified in accordance with the CLP by using the following acute toxicity estimations (ATE): - ATE mixture (Oral) - ATE mixture (Dermal) - ATE mixture (Inhalation)	Nitro-glycerine induces dilation of blood vessels and a drop in blood pressure, this can affect the heart. A methaemoglobinaemia effect (cyanosis) can equally be noted. Between 33 and 50 mg/kg Between 33 and 50 mg/kg Between 3 and 5 mg/l
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Toxicity in relation to reproduction: STOT - Repeated exposure:	<p>Over time, diphenylamine, used as a stabiliser, transforms into N-Nitroso-DPA, a substance classified as acute toxicity cat. 4, carcinogenic and mutagenic cat. 2.</p> <p>The nitro-glycerine renders this mixture STOT RE2 class. Presumed risk of serious effects on circulatory system, blood, kidneys and liver due to repeated or prolonged exposure.</p>
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SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity: 12.2 Persistence and degradability 12.3 Bioaccumulative potential: 12.4 Mobility in soil: 12.5 Result of PBT and vPvB evaluations 12.6 Other adverse effects:	<p>Harmful to aquatic species, leads to long term harmful effects.</p> <p>No data available on the mixture. Diphenylamine: 0 % (14 days)</p> <p>No data available on the mixture. Diphenylamine: LogPow = 3.5</p> <p>No data available on the mixture. Diphenylamine: no data</p> <p>Mixture not classified</p> <p>No other harmful environmental effects known.</p>
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SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods: Residual wastes / non used products: Contaminated packaging:	<p>The product must be subject to special handling in accordance with the regulations in force. It must not be tipped in landfill dumps, but collected according to the recommendations in section 6. Monitored storage (see section 7) or elimination by controlled burning in an appropriate location are recommended. Do not mix this product with incompatible materials (see section 10). In case of difficulties, you are advised to contact PB Clermont SA.</p> <p>It is necessary to monitor any possible contamination of the environment that may result from the use of these substances. The user assumes entire responsibility for eliminating non-used materials, residues and recipients in accordance with the legislation and regulations applicable.</p> <p>The empty recipients may contain explosive residues. Do not cut, pierce, crush or weld empty recipients. Eliminate them in accordance with the applicable federal, national and local regulations.</p>
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SECTION 14: TRANSPORT INFORMATION

DOT / IMDG:

14.1 UN number:

Details available on request from PB Clermont
0160 – 0161 according to packaging

14.2 UN proper shipping name :

SMOKELESS POWDER

14.3 Transport hazard classes:

Class 1

United Nations risk division:

1.1C - 1.3C according to packaging

14.4 Packing group:

II

14.5 Environmental hazards:

NA

Bulk transport according to Appendix II of the convention MARPOL73/78 Convention and IBC Code:

Not applicable

14.6 Special precautions for user:

This product is a dangerous goods during shipment. All workmen involved must be duly informed.

Other information:

The above classification concerns the specific packaging in which the product is supplied by the manufacturer. If the product is repacked, this classification is no longer pertinent.

IATA:

UN number:

Forbidden

UN dispatch name:

Forbidden

Transport hazard classes:

Forbidden

Packing group:

Forbidden

SECTION 15: REGULATORY INFORMATION

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

Regulation (CE) N° 1272/2008 (CLP)

Regulation (CE) N° 1907/2006 (REACH)

Does not contain substances subject to restrictions according to Appendix XVII of REACH.

Does not contain any substance on the REACH candidate list.

Does not normally contain any substance listed in Appendix XIV of REACH, but the mixture may contain traces of Dibutylphthalate (< 0.3 %) - Regulation (CE) N° 1272/2008 - Table 3.7.2 - Repr. 1B H360Df. This small proportion (<0.3%) no longer classifies the mixture as Repr. 1B H360Df according to regulation CLP § 3.7.3.

15.2 Chemical safety assessment

The mixture is not concerned by establishing a chemical safety evaluation.

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SECTION 16: OTHER INFORMATION

16.1. Procedure employed to determine the classification according to CE regulation N°1272/2008 (CLP)

Classification	Justification
Explosive Division 1.3; H203	Test data on mixture as is
STOT RE cat.2 H373	Calculation according to CLP regulation
Acute toxicity (by inhalation) cat.2; H330	Calculation according to CLP regulation
Acute toxicity (by ingestion) cat.2; H300	Calculation according to CLP regulation
Acute toxicity (via skin contact) cat.1; H310	Calculation according to CLP regulation
Chronic toxicity (aquatic milieu) cat.2; H411	Calculation according to CLP regulation

16.2. Integral text of danger categories and summarized H phrases of sections 2 and 3

H200: Unstable explosive.

H201: Explosive; mass explosion hazard.

H203: Explosive; fire, blast or projection hazard.

H300: Fatal if swallowed

H301: Toxic if swallowed.

H330: Fatal if inhaled.

H331: Toxic if inhaled.

H310: Fatal in contact with skin.

H311: Toxic in contact with skin.

H373: May cause damage to organs (state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).

H400: Very toxic to aquatic life.

H410: Very toxic to aquatic life with long lasting effects.

H411: Toxic to aquatic life with long lasting effects.

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Reference : First edition : Last revision : Section(s) examined :	FDS 2 - INDICE 2 - version 1 January 2013 January 2022 All
<p>The present safety data sheet was drawn up on the basis of the knowledge of PB Clermont S.A. relating to the product concerned on the indicated date. The information it contains is given in good faith, but without guarantee, and any use of the product in a manner not complying with the safety data sheet or in combination with any other product or process is the entire responsibility of the user. PB Clermont reminds you that the use of this product for any usage other than that for which it was designed can generate additional risks.</p> <p>The user must, under their own responsibility, take all the necessary and indispensable precautions as follows:</p> <ul style="list-style-type: none">- elaborate pertinent emergency measures for all cases of use of the product, particularly taking into account the data contained in the present data sheet;- ensure that all users and technicians that use the product are aware of the present data sheet, that they use solely the information that it contains in addition to other information and that they come to an independent opinion on the suitability of this information to guarantee a correct usage and to protect the health and safety of workers. <p>This list is not exhaustive and does not exonerate the user from checking if other obligations must be satisfied, due to local regulations in force or internal arrangements of their company, concerning the holding and manipulation of the product. The user alone is responsible for the respect of these obligations.</p> <p>The technical departments of PB Clermont SA are available to users in order to lend assistance where possible and within the limits of their knowledge.</p> <p>The position of PB Clermont is in accordance with the opinion of EDA (European Defence Agency) concerning the classification of propellant powder as an article.</p>	