

Safety Data Sheet
according to 1907/2006/EC, Article 31

Printing date 04.07.2013

Version number 1

Revision: 04.07.2013

1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** **RS60**
- **Article number:** PC 0242 (RS60)
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the preparation** Article for gun tubes
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
NITROCHEMIE Wimmis AG
Niesenstrasse 44
CH 3752 Wimmis
- **Further information obtainable from:**
Dr. Kai Tölle
kai.toelle@nitrochemie.com
Sicherheit und Umwelt Wimmis (SUW)
- **Emergency telephone number:**
++41 33 228 1186 (Switzerland)
DOMESTIC NORTHAMERICA : 800-424-9300
INTERNATIONAL-CALL: 001-703-527-3887

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS01 exploding bomb

Expl. 1.3 H203 Explosive; fire, blast or projection hazard.



GHS06 skull and crossbones

Acute Tox. 1 H310 Fatal in contact with skin.

Acute Tox. 2 H330 Fatal if inhaled.



GHS08 health hazard

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



T+; Very toxic

R26/27: Very toxic by inhalation and in contact with skin.



Xn; Harmful

R48/20/21/22: Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.

(Contd. on page 2)

Safety Data Sheet
according to 1907/2006/EC, Article 31

Printing date 04.07.2013

Version number 1

Revision: 04.07.2013

Trade name: RS60

(Contd. of page 1)



E; Explosive

R2: Risk of explosion by shock, friction, fire or other sources of ignition.

R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

· **Classification system:**

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

· **Label elements**

· **Labelling according to EU guidelines:**

Observe the general safety regulations when handling chemicals.

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

· **Code letter and hazard designation of product:**

T+ Very toxic

E Explosive

· **Hazard-determining components of labelling:**

glycerol trinitrate

· **Risk phrases:**

2 Risk of explosion by shock, friction, fire or other sources of ignition.

26/27 Very toxic by inhalation and in contact with skin.

48/20/21/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.

52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· **Safety phrases:**

27/28 After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water.

36/37 Wear suitable protective clothing and gloves.

45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** Mixture of substances listed below with nonhazardous additions.

(Contd. on page 3)

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 04.07.2013

Version number 1

Revision: 04.07.2013

Trade name: RS60

(Contd. of page 2)

· Dangerous components:

CAS: 9004-70-0	Nitrocellulose E R1-3 Unst. Expl., H200	82%
CAS: 55-63-0 EINECS: 200-240-8	glycerol trinitrate T+ R26/27/28; E R3; N R51/53 R33 Unst. Expl., H200; Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330; STOT RE 2, H373; Aquatic Chronic 2, H411	16%

· **Additional information:** For the wording of the listed risk phrases refer to section 16.

4 First aid measures

· **Description of first aid measures**

· **General information:**

Personal protection for the First Aider.

Take affected persons out of danger area and lay down.

Immediately remove any clothing soiled by the product.

Remove breathing equipment only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

· **After inhalation:**

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

· **After swallowing:** If symptoms persist consult doctor.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** Headache

· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

5 Firefighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:**

Water spray

Water

· **For safety reasons unsuitable extinguishing agents:**

Extinguishing powder

Carbon dioxide

Sand

Foam

· **Special hazards arising from the substance or mixture** No further relevant information available.

· **Advice for firefighters**

· **Protective equipment:**

Wear self-contained respiratory protective device.

Mouth respiratory protective device.

GB

(Contd. on page 4)

Safety Data Sheet
according to 1907/2006/EC, Article 31

Printing date 04.07.2013

Version number 1

Revision: 04.07.2013

Trade name: RS60

(Contd. of page 3)

* **6 Accidental release measures**

- **Personal precautions, protective equipment and emergency procedures** Remove persons from danger area.
- **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

* **7 Handling and storage**

- **Handling:**
- **Precautions for safe handling**
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
- **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Protect from heat.
Prevent impact and friction.
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** storage facility for explosives
- **Information about storage in one common storage facility:**
only storage facility for explosives
pay attention to the compatibility group
- **Further information about storage conditions:**
Keep container tightly sealed.
Protect from heat and direct sunlight.
- **Storage class: 1**
- **Specific end use(s)** No further relevant information available.

* **8 Exposure controls/personal protection**

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

(Contd. on page 5)

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 04.07.2013

Version number 1

Revision: 04.07.2013

Trade name: RS60

(Contd. of page 4)

· Ingredients with biological limit values:
55-63-0 glycerol trinitrate

BMGV	15 µmol/mol creatinine Medium: urine Sampling time: at the end of the period of exposure Parameter: total nitroglycols
-------------	---

· **Additional information:** The lists valid during the making were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing
- Wash hands before breaks and at the end of work.
- Store protective clothing separately.
- Avoid contact with the eyes and skin.
- Standards of Personal Protective Equipment
- Respiratory protection EN 136, 140, 149
- Eye protection EN 166
- Body protection EN 340, 463, 468, 943-1, 943-2
- Protection of hands EN 374
- Safety shoes EN-ISO 20345

· **Respiratory protection:**

- Not necessary if room is well-ventilated.
- In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

- Nomex
- Butyl rubber, BR
- Nitrile rubber, NBR

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **For the permanent contact gloves made of the following materials are suitable:**

antistatic gloves (Nomex) over disposable gloves (nitrile or butylrubber)

· **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**

Nitrile rubber, NBR

· **As protection from splashes gloves made of the following materials are suitable:** Nitrile rubber, NBR

(Contd. on page 6)

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 04.07.2013

Version number 1

Revision: 04.07.2013

Trade name: RS60

(Contd. of page 5)

- **Eye protection:** Safety glasses
- **Body protection:** use antistatic protective work clothing

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

· Form:	Solid
· Colour:	According to product specification
· Odour:	Characteristic

· Change in condition

· Melting point/Melting range:	-
---------------------------------------	---

· Flash point:	-
-----------------------	---

· Ignition temperature:	ca. 170 °C
--------------------------------	------------

· Self-igniting:	Product is not selfigniting.
-------------------------	------------------------------

· Danger of explosion:	sensitive to detonation blast (detonator) - Explosive with or without contact with air Risk of explosion by shock, friction, fire or other sources of ignition.
-------------------------------	--

· Minimum ignition temperature of a dust cloud	170 °C
---	--------

· Density:	Not determined.
-------------------	-----------------

s.PLB

· Other information	No further relevant information available.
----------------------------	--

10 Stability and reactivity

· Reactivity

· Chemical stability

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

· **Possibility of hazardous reactions** Reacts with acids, alkalis and oxidizing agents.

· **Conditions to avoid** No further relevant information available.

· Incompatible materials:

acid

Oxidiser

· **Hazardous decomposition products:** Nitrogen oxides

11 Toxicological information

· Information on toxicological effects

· Acute toxicity:

· LD/LC50 values relevant for classification:

55-63-0 glycerol trinitrate

Oral	LD50	525 mg/kg (rat)
------	------	-----------------

(Contd. on page 7)

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 04.07.2013

Version number 1

Revision: 04.07.2013

Trade name: RS60

(Contd. of page 6)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
 The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
 Very toxic
 Danger through skin adsorption.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

55-63-0 glycerol trinitrate

LC50 1.28 mg/l (Fisch (L.macrochirus))
--

- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Harmful to fish
- **Additional ecological information:**
- **General notes:**
 Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
 Do not allow product to reach ground water, water course or sewage system, even in small quantities.
 Danger to drinking water if even extremely small quantities leak into the ground.
 Harmful to aquatic organisms
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

* 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**
 Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **European waste catalogue** 160403
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

* 14 Transport information

- | | |
|--|--------|
| <ul style="list-style-type: none"> · UN-Number · ADR, IMDG, IATA | UN0161 |
|--|--------|

(Contd. on page 8)

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 04.07.2013

Version number 1

Revision: 04.07.2013

Trade name: RS60

(Contd. of page 7)

<ul style="list-style-type: none"> · <i>UN proper shipping name</i> · ADR · IMDG, IATA 	<p>0161 TREIBLADUNGSPULVER POWDER, SMOKELESS</p>
<ul style="list-style-type: none"> · <i>Transport hazard class(es)</i> · ADR 	<p>1 (1.3C) Explosive substances and articles.</p>
<ul style="list-style-type: none"> · Label 	<p>1.3C</p>
<ul style="list-style-type: none"> · IMDG 	<p>1.3C</p>
<ul style="list-style-type: none"> · Label 	<p>1.3C</p>
<ul style="list-style-type: none"> · IATA 	<p>0481</p>
<ul style="list-style-type: none"> · Label 	<p>1.3C</p>
<ul style="list-style-type: none"> · <i>Packing group</i> · ADR, IMDG, IATA 	<p>II</p>
<ul style="list-style-type: none"> · <i>Environmental hazards:</i> · <i>Marine pollutant:</i> 	<p>No</p>
<ul style="list-style-type: none"> · <i>Special precautions for user</i> · EMS Number: 	<p>Warning: Explosive substances and articles. F-B,S-Y</p>
<ul style="list-style-type: none"> · <i>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</i> 	<p>Not applicable.</p>
<ul style="list-style-type: none"> · <i>Transport/Additional information:</i> 	<p></p>
<ul style="list-style-type: none"> · ADR · <i>Tunnel restriction code</i> 	<p>C5000D</p>
<ul style="list-style-type: none"> · UN "Model Regulation": 	<p>UN0161, POWDER, SMOKELESS, 1.3C (1.3C), II</p>

15 Regulatory information

- *Safety, health and environmental regulations/legislation specific for the substance or mixture*
- **Labelling according to EU guidelines:**
Observe the general safety regulations when handling chemicals.

(Contd. on page 9)

Safety Data Sheet
according to 1907/2006/EC, Article 31

Printing date 04.07.2013

Version number 1

Revision: 04.07.2013

Trade name: RS60

(Contd. of page 8)

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

Code letter and hazard designation of product:

T+ Very toxic
E Explosive

Hazard-determining components of labelling:

glycerol trinitrate

Risk phrases:

2 Risk of explosion by shock, friction, fire or other sources of ignition.
26/27 Very toxic by inhalation and in contact with skin.
48/20/21/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases:

27/28 After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water.
36/37 Wear suitable protective clothing and gloves.
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
61 Avoid release to the environment. Refer to special instructions/safety data sheets.

National regulations:

Class	Share in %
I	16.4

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases

H200 Unstable explosives.
H300 Fatal if swallowed.
H310 Fatal in contact with skin.
H330 Fatal if inhaled.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.
R1 Explosive when dry.
R26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.
R3 Extreme risk of explosion by shock, friction, fire or other sources of ignition.
R33 Danger of cumulative effects.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Department issuing MSDS: Abteilung Sicherheit und Umweltschutz

Contact:

Hr. Dr. Kai Tölle
e-mail: kai.toelle@nitrochemie.com

Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

(Contd. on page 10)

Safety Data Sheet
according to 1907/2006/EC, Article 31

Printing date 04.07.2013

Version number 1

Revision: 04.07.2013

Trade name: RS60

(Contd. of page 9)

ICAO: International Civil Aviation Organization

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

*** Data compared to the previous version altered.**

GB