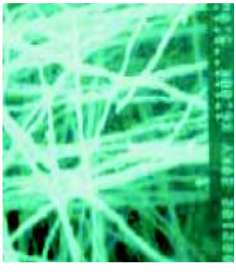
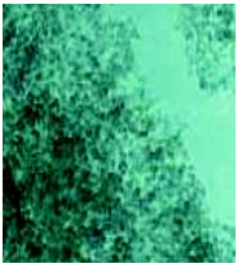
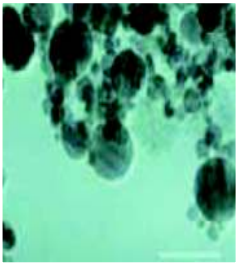
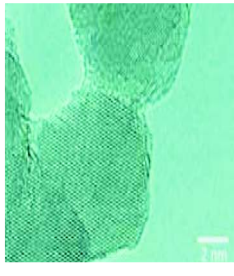
Reinste
Nano Ventures

Designed to deliver the purest….





- Carbon Nanotubes
- Nanodiamonds
- NEW Nanoceramics
- NEW Quantum Dots
- NEW Nanometals
- Fullerenes
- Nanowires
- PEG Derivatives
- Tectomers
- NEW Nano - and Micro - Salts
- Phosphonic Acid Derivatives
- Industrials Use Products
- Ionic Liquids

Nanomaterials

& Related products

Catalogue 2018-2019

Content

Carbon Nanotubes, multiwalled

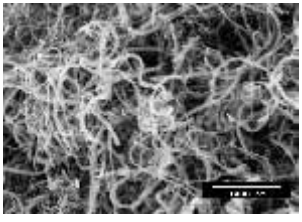
Carbon purity: min. 95 %

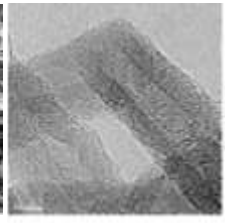
Number of walls: 3-15

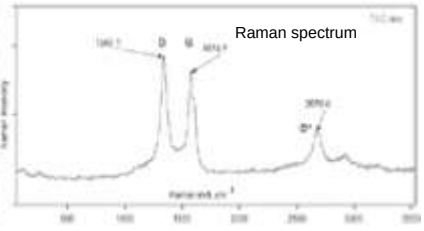
Outer diameter: 5-20 nm; Inner diameter: 2-6 nm; Length: 1-10 µm

Apparent density: 0.15-0.35 g/cm^3

Loose agglomerate size: 0.1-3 mm







RN-PL-MCNP-1g	1 g
RN-PL-MCNP-10g	10 g
RN-PL-MCNP-50g	50 g
RN-PL-MCNP-100g	100 g

Carbon Nanotubes, multiwalled, charged, water soluble

Carbon nanotubes (CNTs) type RN - PL-MCNP, additionally modified by -COOH or -SO$_3$H groups. Soluble in water forming dark, transparent suspensions stable for many months.

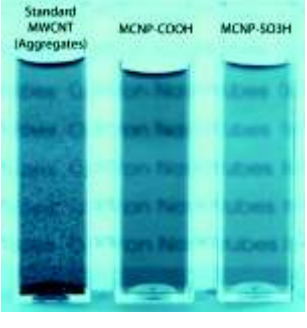
Image: *aq. suspensions of unstable unmodified (left) and stable modified CNTs.*

COOH- modified:

RN-PL-MCNP-COOH-100mg	100 mg
RN-PL-MCNP-COOH-500mg	500 mg
RN-PL-MCNP-COOH-1g	1 g

SO$_3$H- modified:

RN-PL-MCNP-SO3H-100mg	100 mg
RN-PL-MCNP-SO3H-500mg	500 mg
RN-PL-MCNP-SO3H-1g	1 g

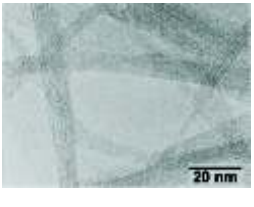


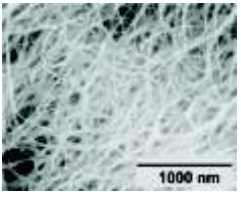
Carbon Nanotubes, single-walled

Produced by arc discharge method. SWCNTs assembled in bundles

Carbon purity: > 90 %; Diameter: ca. 1.4 nm; Length: > 10 µm

RN-PL-SCNP-100mg	100mg
RN-PL-SCNP-500mg	500mg





Research Grade Single Walled Carbon Nano Tubes (SWCNTs)

Manufacturing method: Plasma torch synthesis

Diameters (0.9-1.5 nm)
Lengths (0.3-4 µm)
SWCNT Content 30%
Ash content 27% ~

RN-RM-SWNT020-1g	1g
RN-RM-SWNT020-5g	5g
RN-RM-SWNT020-10g	10 g

Typical Analysis

1. Thermogravimetric Analysis (TGA)

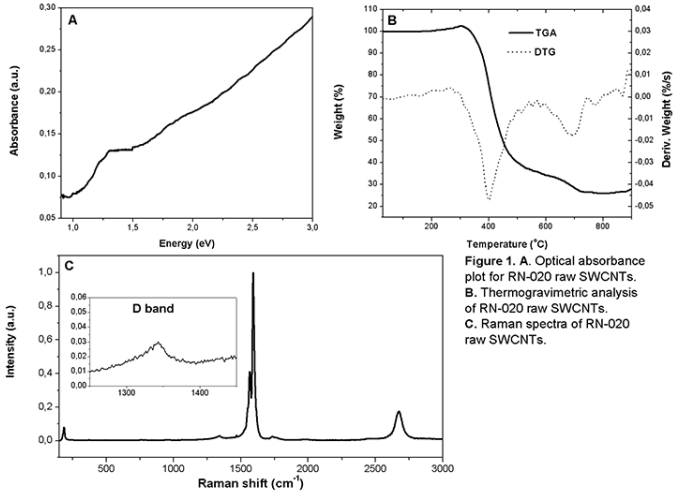


Figure 1. A. Optical absorbance plot for RN-020 raw SWCNTs. **B.** Thermogravimetric analysis of RN-020 raw SWCNTs. **C.** Raman spectra of RN-020 raw SWCNTs.

2. Purified SWCNT

SWNT Content: 60-70%
Diameters (0.9-1.5 nm)
lengths (0.3-4 µm) Ash
Content : 21%

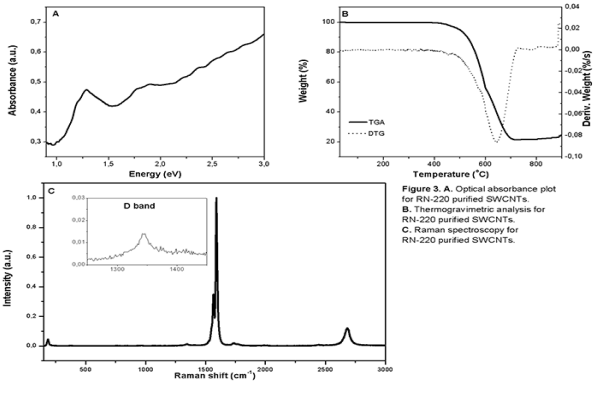


Figure 3. A. Optical absorbance plot for RN-220 purified SWCNTs. **B.** Thermogravimetric analysis for RN-220 purified SWCNTs. **C.** Raman spectroscopy for RN-220 purified SWCNTs.

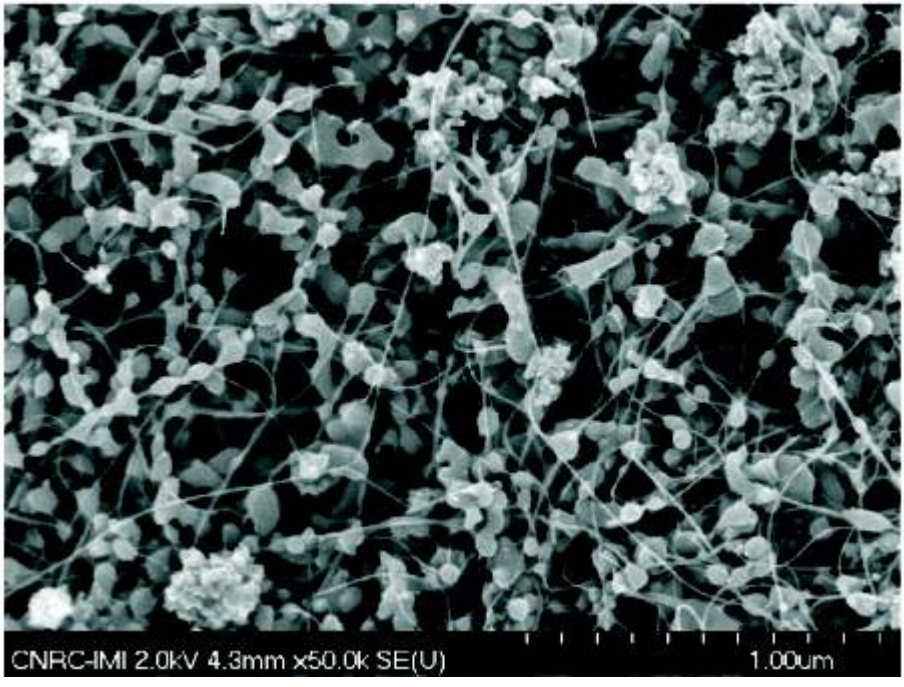
RN-RM-SWNT220-1g	1g
RN-RM-SWNT220-5g	5g
RN-RM-SWNT220-10g	10 g

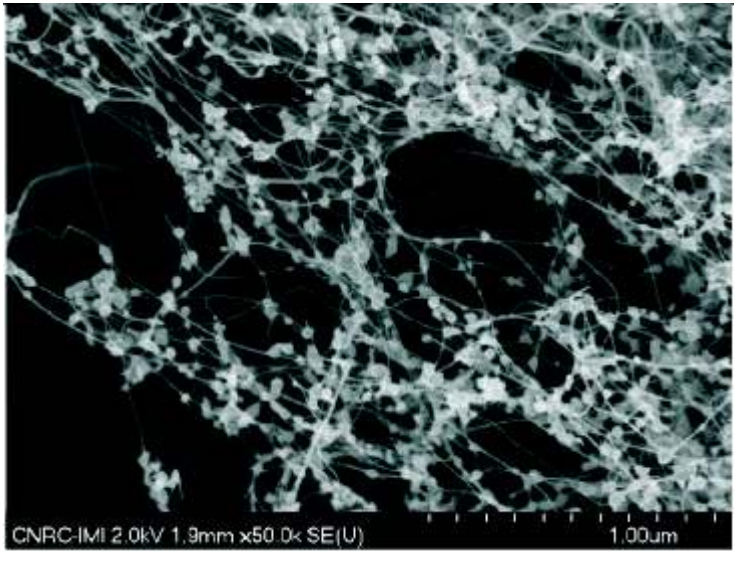
3. Optical Absorption

Provide ratio of semi-conductor band (S22) on total carbon absorption

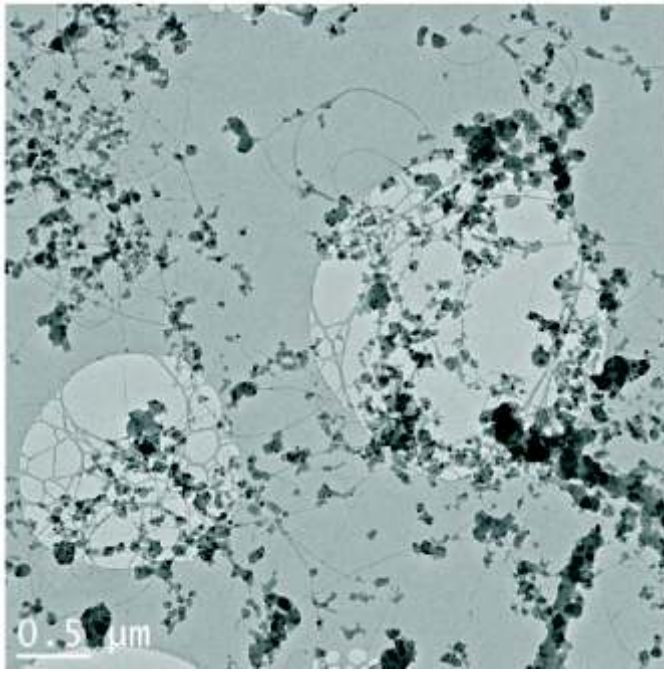
Itkis Index: 0.030

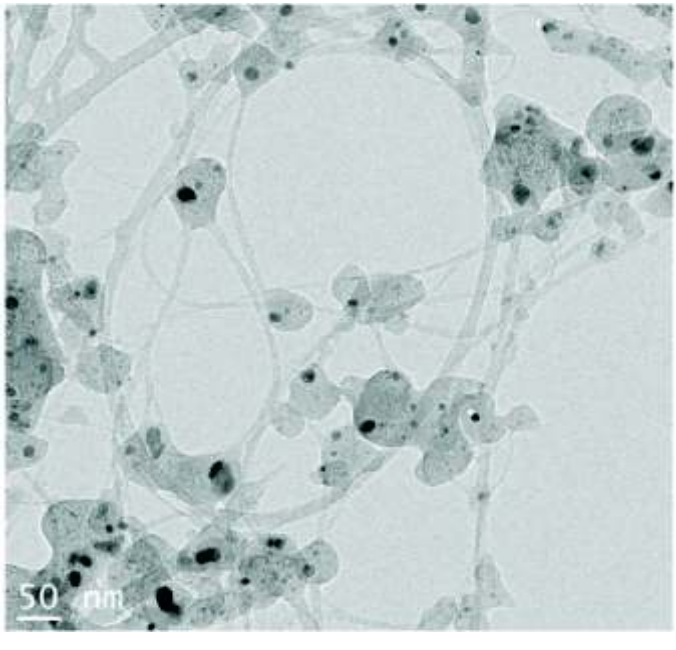
4. Scanning Electron Microscopy



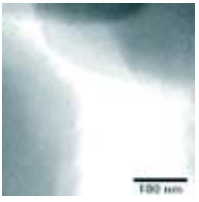


5. Transmission Electron Microscopy





Carbon mesoporous, highly ordered



Average particle size: ca. 1.5 µm

Specific surface: ca. 600 m²/g;

Pore radius: ca. 1.8 nm; Mesopores volume: ca. 0.6 cm³/g

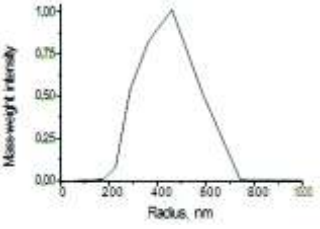
Distance between pores: ca. 9 nm;

RN-PL-COM-1g	1 g

Nanographite powder

Produced by chemical desintegration of graphite.

Average particle radius 400-450 nm



RN-PL-Gr4-5g	5 g
RN-PL-Gr4-25g	25 g

Carbon Black nanopowder

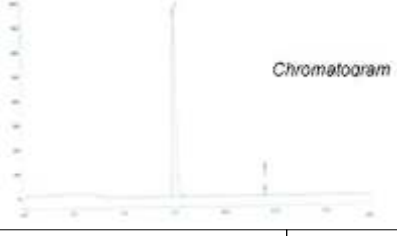
The finest analogue of industrially used filler for polymer composites

Average particle size: ca. 13 nm; Specific surface: ca. 550 m²/g

Ash content: < 0.02 %; Bulk density: ca. 120 g/L

RN-PL-CB13-5g	5 g
RN-PL-CB13-50g	50 g
RN-PL-CB13-200g	200 g

Fullerene C60, 99+%



Time	Name	Volume, %
7.557	C60	99.956
11.873	C70	0.044
-	Others	0.000

RN-PL-1C60-250mg	250 mg
RN-PL-1C60-500mg	500 mg
RN-PL-1C60-1g	1 g

Fullerene C70, 99+%

Time	Name	Volume, %
7.60	C60	0.07
111.85	C70	99.91
	Others	0.002

RN-PL-1C70-10mg	10 mg
RN-PL-1C70-50mg	50 mg
RN-PL-1C70-200mg	200 mg

NanoDiamonds

All types of nanodiamonds and nanographite / nanodiamonds mixtures are produced by controlled dry detonation synthesis followed by purification procedures.
We are ready to change product quality in case of special requirements.

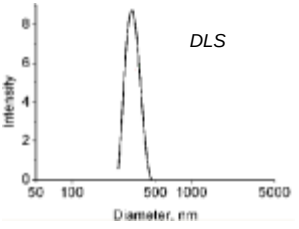
Graphite / Diamond Nano-Mixture,
the most native, raw, just after detonation synthesis

Average diamond primary particle size: 4 nm

Diamond content: min. 20%

Ash content: < 6%

RN-PL-GD-5g	5 g
RN-PL-GD-25g	25 g
RN-PL-GD-100g	100 g



Graphite / Diamond Nano-Mixture,
purified from metallic and organic impurities

Average diamond primary particle size: 4 nm

Diamond content: min. 20%

Ash content: < 0.3%

RN-PL-GD-MOF-5g	5 g
RN-PL-GD-MOF-25g	25 g
RN-PL-GD-MOF-100g	100 g

NanoDiamonds, purified, grade G

Enhanced suspension stability in water

Specific surface (BET): min. 290-360 m²/g

Diamond phase content: min. 87%

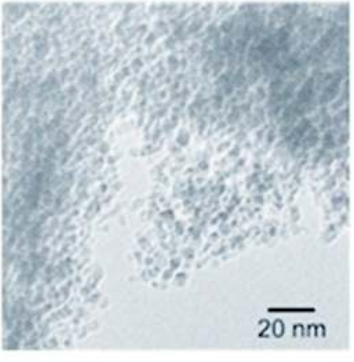
Non-diamond carbon content: max. 6%

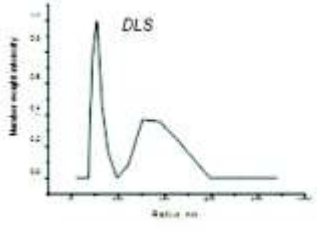
Impurities, %: Fe < 1,2; Ca+Zn+Cr+Ni+Cu+Mn:<2

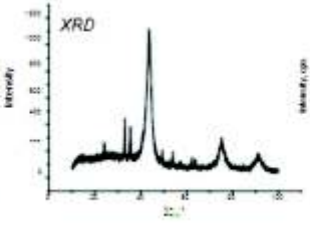
Losses at tempering: < 3%

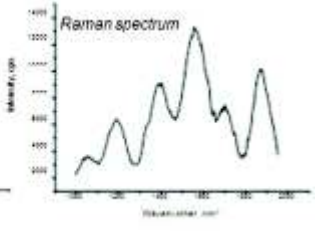
Ash content: < 6%

Average cluster size: ca. 4 nm









pK1	Amount mmol/g	pK2	Amount mmol/g	pK3	Amount mmol/g	pK4	Amount mmol/g	Sum amount groups, mmol/g
3.7	0.04	5.2	0.17	8.5	0.12	10.4	0.14	0.47

RN-PL-D-G-1g	1 g
RN-PL-D-G-5g	5 g
RN-PL-D-G-25g	25 g
RN-PL-D-G-100g	100 g

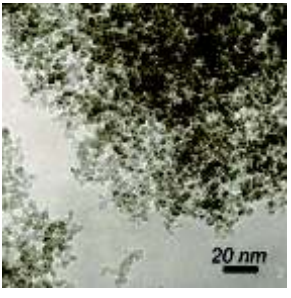
NanoPure-G, nanodiamonds aqueous suspension, grade G

Most native 4 wt.% aqueous suspension of nanodiamonds, type RN - PL-D-G.

The nanodiamonds are preserved in the most dispersed form.

RN-PL-Nanopure-G-10m	10 mL
RN-PL-Nanopure-G-50m	50 mL
RN-PL-Nanopure-G-100m	100 mL

NanoDiamonds, purified, grade G01



Enhanced suspension stability in water

Bulk density: 0.69 g/cm^3

Average cluster size: ca. 4 nm

Specific surface (BET): min. 350 m^2/g

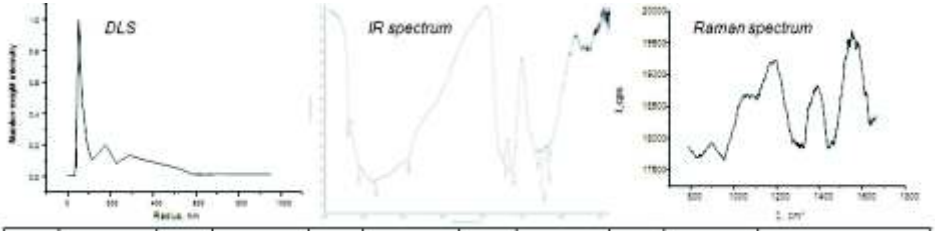
Non-diamond carbon content: traces

Controlled admixtures, %: Fe < 0.3; Cu < 0.01;
Zn < 0.01; Mn < 0.01; Si+Cr+Ca+Ti < 0.01

Losses at tempering: max. 2.4%

Ash content: <1.4%; Picnometric density: 3.18 g/cm^3

Zeta potential: -50 ± 5 mV



pK1	Amount mmol/g	pK2	Amount mmol/g	pK3	Amount mmol/g	pK4	Amount mmol/g	pK5	Amount mmol/g	Sum amount groups,mmol/g
3.7	0.09	4.5	0.19	6.6	0.1	8.5	0.14	9.9	0.1	0.62

RN-PL-D-G01-1g	1 g
RN-PL-D-G01-5g	5 g
RN-PL-D-G01-25g	25 g
RN-PL-D-G01-100g	100 g

NanoPure-G01, nanodiamonds aqueous suspension, grade G01

Most native 4 wt.% aqueous suspension of nanodiamonds, type RN - PL-D-G01.

The nanodiamonds are preserved in the most dispersed form.

RN-PL-Nanopure-G01-10m	10 mL
RN-PL-Nanopure-G01-50m	50 mL
RN-PL-Nanopure-G01-100m	100 mL

Nanodiamonds, positively charged, aq. suspension

Aqueous suspension with 10 % of modified G01 nanodiamonds

Nanodiamonds with the surface modified by polyelectrolyte electrostatic adsorption.

Zeta potential: +50 ± 5 mV

RN-PL-D-G01P-10m	10 mL
RN-PL-D-G01P-50m	50 mL

NanoDiamonds, extra-pure

Purity: >99%. Ash content: < 0.1%

RN-PL-D-G02-1g	1 g
RN-PL-D-G02-10g	10 g

Single-Digit NanoDiamonds (SDND)

Forms transparent stable colloidal solution of nanodiamonds in water and many polar organic solvents. Free of additives and milling impurities.

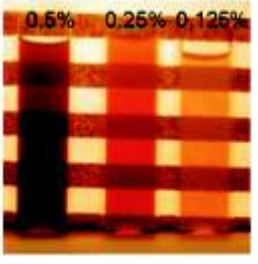
Produced by chemical desintegration. Aqueous 5% solution.

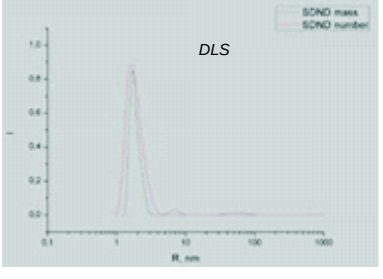
Diamond crystallite size: 3.5-5.2 nm

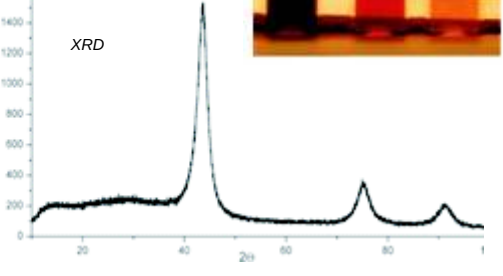
Specific surface: 320-350 m²/g, Particle size (DLS): 5-15 nm

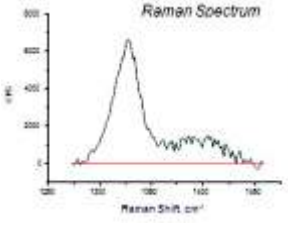
Ash content: <0.4%

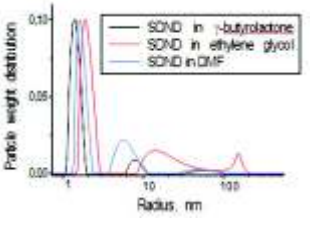
Can also be supplied in DMF, GBL, EG. Ask for quotation.











pK1	mmol/g	pK2	mmol/g	pK3	mmol/g	Sum amount groups, mmol/g
3.4	0.08	6.6	0.32	9.9	0.19	0.59

RN-PL-SDND-5p-1g	20 mL
RN-PL-SDND-5p-10g	200 mL
RN-PL-SDND-5p-50g	1000 mL

Diamond particles: from sub-micron to micron
Produced by static synthesis

Diamonds, grade 0.1/0

Particles size range: ≤100 nm

RN-PL-DD-01-0-1g	1 g (5 carat)
RN-PL-DD-01-0-5g	5 g (25 carat)

Diamonds, grade 0.25/0

Particles size range: ≤250 nm

RN-PL-DD-025-0-1g	1 g (5 carat)
RN-PL-DD-025-0-5g	5 g (25 carat)

Diamonds, grade 0.5/0

Particles size range: ≤500 nm

RN-PL-DD-05-0-1g	1 g (5 carat)
RN-PL-DD-05-0-5g	5 g (25 carat)

Diamonds, grade 1/0.5

Particles size range: 500 - 1000 nm

RN-PL-DD-1-05-1g	1 g (5 carat)
RN-PL-DD-1-05-5g	5 g (25 carat)

Diamonds, grade 14/10

Particles size range: 10 - 14 µm (1200 mesh)

RN-PL-DD-14-10-1g	1 g (5 carat)
RN-PL-DD-14-10-5g	5 g (25 carat)

Diamonds, grade 110/80

Particles size range: 80 - 110 µm (140-170 mesh)

RN-PL-DD-110-80-1g	1 g (5 carat)
RN-PL-DD-110-80-5g	5 g (25 carat)

Diamonds, grade 300/250

Particles size range: 250 - 300 µm (50-60 mesh)

RN-PL-DD-300-250-1g	1 g (5 carat)
RN-PL-DD-300-250-5g	5 g (25 carat)

Diamonds, grade 600/500

Particles size range: 500 - 600 µm (30-35 mesh)

RN-PL-DD-600-500-1g	1 g (5 carat)
RN-PL-DD-600-500-5g	5 g (25 carat)

Oxide NanoCeramics

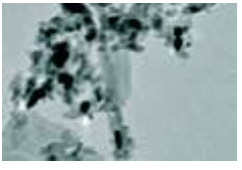
Along with the listed NanoCeramics many other ceramics were produced as trial batches, e.g. NanoCeramics from Rare Earth Oxides, HfO_2, MgO+C, TiO_2, TiC, TiN, BN, YO_2 $_3$
Basic technology permits to produce nearly any ceramic in nanosized form, thus we are expecting here the concrete wishes from our customers.

Aluminium oxide

Al_2O_3 Nanopowder, (alpha) Particle shape: spherical
Average particle size: ca. 40 nm, Particle size full range: 5 - 150 nm
Specific surface: > 10 m²/g, Purity: > 99.8 %, X-Ray analysis: α-Al_2O_3

RN-PL-A-AlO-10g	10 g
RN-PL-A-AlO-50g	50 g
RN-PL-A-AlO-100g	100 g

Aluminium oxide



Al_2O_3 Nanopowder, (gamma) Particle shape: spherical, elongated
Average particle size: ca. 40 nm; Specific surface: > 40 m²/g
Purity: > 99.9 %; X-Ray analysis: γ-Al_2O_3

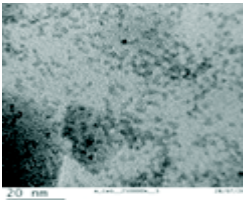
RN-PL-G-AlO-10g	10 g
RN-PL-G-AlO-50g	50 g
RN-PL-G-AlO-100g	100 g

Aluminium oxide

Al_2O_3 Nanopowder, (Theta)
Average particle size, nm: ca. 15; Specific surface: ca. 90-110 m²/g

RN-PL-T-AlO-10g	10 g
RN-PL-T-AlO-50g	50 g
RN-PL-T-AlO-100g	100 g

Cerium oxide



CeO_2- Nanoparticles aqueous 5 wt.% suspension
Produced by chemical synthesis, Average particle size: ca. 4 nm

RN-PL-CeO-10g	200 mL
RN-PL-CeO-50g	1000 mL

Copper oxide

CuO - Nanoparticles powder, Purity: >99%
Particle shape: spherical, Average particle size: ca. 40 nm
Specific surface: > 10 m²/g, Bulk density: ca. 0.8 g/cm³

RN-PL-CuO-10g	10 g
RN-PL-CuO-50g	50 g

Indium oxide

In_2O_3 Nanopowder

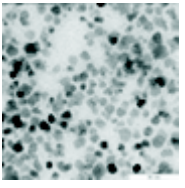
Produced by chemical synthesis

Average particle size: ca. 4 nm

RN-PL-InO-10g	10 g
RN-PL-InO-50g	50 g
RN-PL-InO-100g	100 g

Iron (II,III) oxide

Fe_3O_4 Nanoparticles aqueous suspension, magnetic fluid



ca. 300 Gauss, aqueous suspension

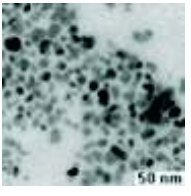
Contains ca. 3% of stabilizer (oleic acid)

Average particle size: 8 nm

Concentration: ca. 7 wt.%

RN-PL-M-Fe3O4-10m	10 mL

Fe_3O_4 Nanoparticles aqueous suspension, magnetic fluid



Without organic stabilizers

Excellent for L-b-L, LB coatings and for experiments

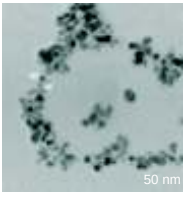
where absence of organic stabilizer is desirable.

Average particle size: 8±3 nm. Concentration: ca. 3%

RN-PL-A-Fe3O4-10m	10 mL

Iron (III) oxide

Fe_2O_3 Nanoparticles aqueous suspension



Produced by chemical synthesis

Average particle size: 4-8 nm

Supplied as 5% aqueous suspension

RN-PL-FeO-10g	200 mL
RN-PL-FeO-50g	1000 mL

Magnesium Oxide

MgO - Nanopowder

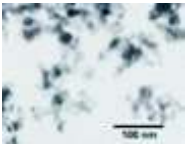
Primary particle average size: ca.20 nm; Specific surface: ca. 50 m^2/g

Purity: > 99%

RN-PL-MgO-25g	25 g

Silicon dioxide

SiO_2- Fumed silica, nanopowder, hydrophilic



Primary particle average size: 7-14 nm

Specific surface: > 200 m^2/g

Bulk Density: ca. 0.048 g/cm^3

Purity: > 99.8% (excl. ca. 2% moisture)

RN-PL-SiOF-25g	25 g

SiO_2- Fumed silica, nanopowder, hydrophobic

Primary particle average size: ca. 14 nm
Specific surface: ca. 100 m^2/g
Bulk Density: ca. 0.05 g/cm^3; Purity: > 99.8% (excl. stabilizer)
Modified by polydimethylsiloxane (PDMS)

RN-PL-SiOF-PDMS-25g	25 g

SiO_2- Fumed silica, nanopowder, hydrophobic

Primary particle average size: 7-14 nm
Specific surface: ca. 150 m^2/g
Bulk Density: ca. 0.05 g/cm^3; Purity: > 99.8% (excl. stabilizer)
Modified by octylsilane

RN-PL-SiOF-OS-25g	25 g

SiO_2- Nanoparticles, 10 nm, 30% aqueous suspension

Primary particle average size: ca.10 nm
Specific surface: ca. 320 m^2/g
Density: ca. 1.2 g/cm^3;
Purity of solid component: > 99.5%
Admixtures: Na ca. 0.45%

RN-PL-SiO10-30p-100m	100 mL

SiO_2- Nanoparticles, 20 nm, 50% aqueous suspension

Primary particle average size: ca.20 nm
Specific surface: ca. 140 m^2/g
Density: ca. 1,4 g/cm^3;
Purity of solid component: > 99.5%
Admixtures: Na ca. 0.25%

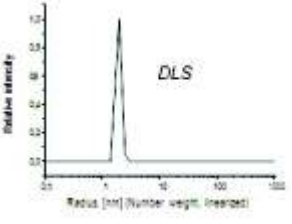
RN-PL-SiO20-50p-100m	100 mL

Strontium oxide

SrO - Nanopowder

Produced by chemical synthesis
Average particle size: 200±50 nm

RN-PL-SrO-1g	1 g
RN-PL-SrO-10g	10 g



Tin oxide

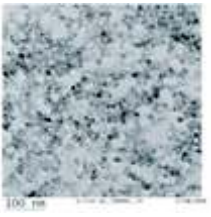
SnO_2- Nanoparticles suspension, 5%

Produced by chemical synthesis
Average particles size 4-8 nm
Purity of dry component: min. 99.5%

RN-PL-SnO-10g	200 mL
RN-PL-SnO-50g	1000 mL

Titanium oxide

TiO_2- Nanoparticles, dry powder anatase phase



Produced by chemical synthesis

Average particle size: 4-8 nm

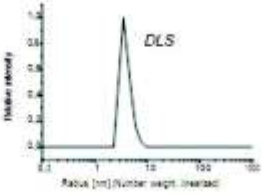
Dry nanopowder, free of organic stabilizers.

Easily forms collidal solutions in water.

Can be used to produce coatings.

RN-PL-TiO-NO-10g	10 g
RN-PL-TiO-NO-50g	50 g

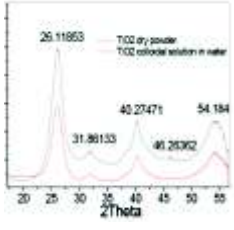
TiO_2- Nanoparticles aqueous suspension, anatase phase

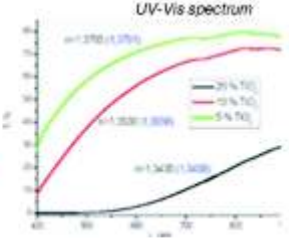


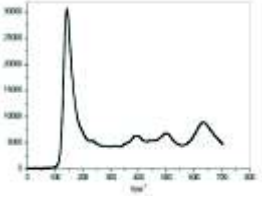
Produced by chemical synthesis

Average particle size: 6±2 nm.

Aqueous colloidal solutions: 5, 10 or 20 wt.%







Aqueous colloidal solution, 10 wt.%

RN-PL-TiO-5p-10g	200 mL
RN-PL-TiO-5p-50g	1000 mL

Aqueous colloidal solution, 10 wt.%

RN-PL-TiO-10p-10g	100 mL
RN-PL-TiO-10p-50g	500 mL

Aqueous colloidal solution, 20 wt.%

RN-PL-TiO-20p-10g	50 mL
RN-PL-TiO-20p-50g	250 mL

TiO_2- Nanoparticles, type P25

Photocatalytic standard P25

Dry Nanopowder. Mixed rutile / anatase phase

Average primary particle size: 21±5 nm.

Specific surface: 50±10 m²/g; Purity after ignition: >99.5%

Ignition loss: < 2%; Moisture: < 1.5%

Al2O3 < 0.3 wt.%; SiO2 < 0.2 wt.% Tapped density: ca. 130 g/L

RN-PL-TiO-P25-10g	10 g
RN-PL-TiO-P25-50g	50 g

TiO_2- Nanoparticles, type P25, hydrophobized

Photocatalytic standard P25, Dry Nanopowder.
Mixed rutile / anatase phase
Average primary particle size: 21±5 nm.
Specifi c surface: 50±10 m2/g
Purity after ignition: >99,5%
Ignition loss: < 2%; Moisture: < 1,5%
Al2O3 < 0,3 wt.%; SiO2 < 0,2 wt.%

RN-PL-TiO-P25-HPB-10g	10 g
RN-PL-TiO-P25-HPB-50g	50 g

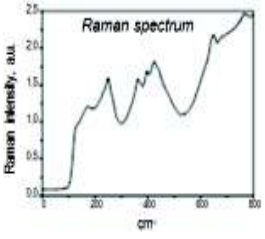
TiO_2- Nanoparticles aqueous suspension, brookite/anatase

Average particle size: 2-5 nm.

Mixed brookite / anatase phase.

Stabilized by tetramethylammonium hydroxide

Aqueous colloidal solution, 20 wt.%

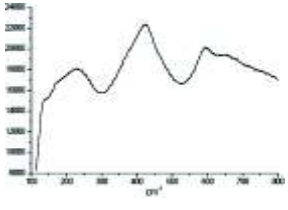


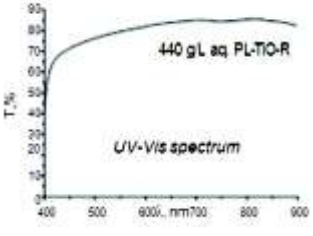
RN-PL-TiO-N-20p-15g	75 mL
RN-PL-TiO-N-20p-50g	250 mL

TiO_2- Nanoparticles, rutile

Average particle size: 2±1 nm. Dry nanopowder.

Readily forms colloidal solutions in water (up to 900g/L) and methanol





RN-PL-TiO-R-5g	5 g
RN-PL-TiO-R-25g	25 g

TiO2- Nanoparticles, anatase, hydrophobic, 25% & 40%

Average Particle Size:4-8nm, Anatase phase, Highly transparent.
Stabilized by 2-[2-(2-Methoxyethhoxy)ethoxy}acetic acid
Forms transparent colloidal solutions in mixture of: 80% PGMEA : 20%PGME (PGMEA: Propylene glycol methyletheracetate; PGME=Propylene glycol methyl ether), Supplied as a 250g/L & 400g/L solution in PGMEA/PGME

RN-PL-TiO-PGMEA-25p-10m	10ml	RN-PL-TiO-PGMEA-40p-10m	10ml
RN-PL-TiO-PGMEA-25p-100m	100ml	RN-PL-TiO-PGMEA-40p-100m	100ml

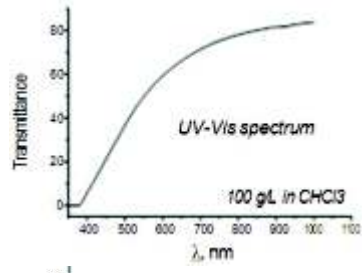
TiO_2- Nanoparticles, anatase, hydrophobic

Average particle size: 4-8 nm. Anatase phase.
Stabilized by dodecylphosphonic
acid and hexylamine.

Forms transparent colloidal
solutions in chloroform.

Supplied as a powder

RN-PL-TiO-HPBC-1g	1 g
RN-PL-TiO-HPBC-10g	10 g



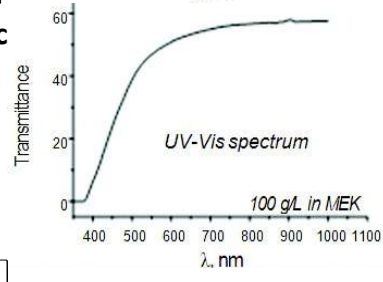
TiO_2- Nanoparticles, anatase, hydrophobic

Average particle size: 4-8 nm. Anatase phase.
Stabilized by benzoic acid

Forms transparent colloidal solutions in MEK
(methylethylketone) and many epoxides.

Supplied as a 100 g/L solution in MEK.

RN-PL-TiO-HPBM-10p-1g	10 mL
RN-PL-TiO-HPBM-10p-10g	100 mL



New

TiO_2- Nanorods, 1% aqueous solution

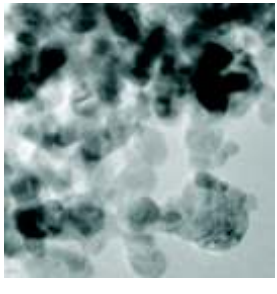
Length: ca. 100 nm.
Diameter: 20-40 nm
Stabilized only with citrate.
Phase: anatase
Supplied as a 1 wt.% aqueous solution

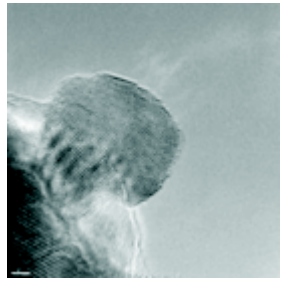
RN-PL-TiONR-10m	10 mL
RN-PL-TiONR-100m	100 mL

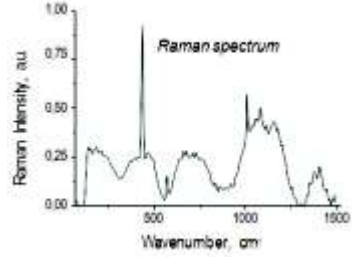
Zinc oxide

ZnO - Nanopowder, ca. 14 nm

Average particle size: ca. 14 nm; Specific surface area: 30±5 m^2/g Purity: > 99%



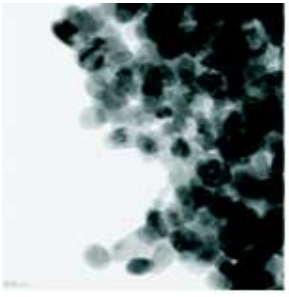


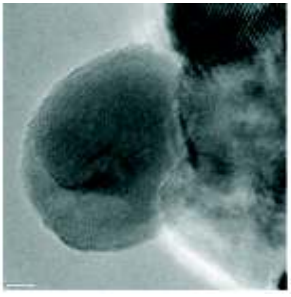


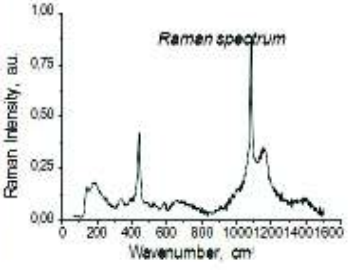
RN-PL-ZnO14-5g	5 g
RN-PL-ZnO14-25g	25 g
RN-PL-ZnO14-100g	100 g

ZnO - Nanopowder, ca. 25 nm

Average particle size: ca. 25 nm; Specific surface area: 19±5 m²/g Purity: > 99%







RN-PL-ZnO25-5g	5 g
RN-PL-ZnO25-25g	25 g
RN-PL-ZnO25-100g	100 g

Zirconium oxide

ZrO_2- Nanopowder, tetragonal

Stabilized with 3 mol% Y_2O_3

Average particle size: 10-30 nm; Specific surface area: 45±10 m²/g

Purity: > 92.7%

Controlled admixtures, %: Y_2O_3 ca. 5.2; Al_2O_3 <0.07; SiO<0.09; HfO<1.87

RN-PL-D-T-ZrO-5g	5 g
RN-PL-D-T-ZrO-25g	25 g
RN-PL-D-T-ZrO-100g	100 g

ZrO_2- Nanopowder, monoclinic

Average particle size: 5-25 nm; Specific surface area: 130±20 m²/g

Purity: > 97.2%

Controlled admixtures, %: Y_2O_3<0.018; Al_2O_3<0.24; SiO<0.15; HfO<1.91; TiO_2<0.42; Fe_2O_3<0.021

RN-PL-M-ZrO-5g	5 g
RN-PL-M-ZrO-25g	25 g
RN-PL-M-ZrO-100g	100 g

ZrO_2- Nanopowder, cubic

Stabilized with 6 mol% Y_2O_3

Average particle size: 20-50 nm; Shape: spherical.

Particles are bound by necks forming aggregates.

Cubic structure is due to the stabilizer and to the small particle size (size effect).

RN-PL-D-C-ZrO-5g	5 g
RN-PL-D-C-ZrO-25g	25 g
RN-PL-D-C-ZrO-100g	100 g

ZrO_2- Nanopowder, tetragonal

Stabilized with 6 mol% Y_2O_3

Average particle size: 100-200 nm

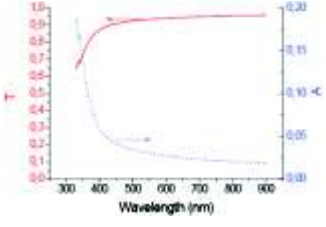
RN-PL-T-ZrO-5g	5 g
RN-PL-T-ZrO-25g	25 g
RN-PL-T-ZrO-100g	100 g

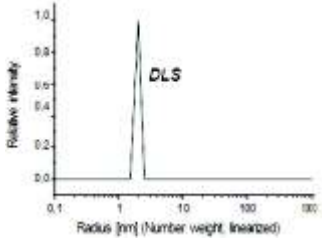
ZrO_2- Nanopowder, hydrophilic forms colloidal solutions

Stabilized by benzoic acid.

Average particle size: ca. 3 nm

Forms stable colloidal solutions in MEK and epoxides.





RN-PL-ZrO-HPL-1g	1 g
RN-PL-ZrO-HPL-5g	5 g

ZrO_2- Nanopowder, hydrophobic forms colloidal solutions

Same as above, but additionally stabilized by benzoic acid.

Average particle size: ca. 3 nm

Forms stable colloidal solutions in MEK and epoxides

RN-PL-ZrO-HPB-1g	1 g
RN-PL-ZrO-HPB-5g	5 g

Yttrium oxide

Y_2O_3 Nanopowder

Average particles size: 30-50 nm

Specifi c surface area: ca. 40 m²/g

RN-PL-P-Y2O3-5g	5 g
RN-PL-P-Y2O3-25g	25 g
RN-PL-P-Y2O3-100g	100 g

Non-oxide NanoCeramics

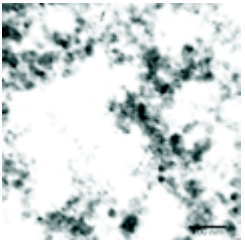
Along with the listed NanoCeramics many other ceramics were produced as trial batches. Basic technology permits to produce nearly any ceramic in nanosized form, thus we are expecting here the concrete wishes from our customers.

Aluminium Nitride
AlN - Nanopowder

Particle shape: spherical, hexagonal, polyhedronal, fragmental
Particle size full range: 5 - 200 nm
Average particle size: 25 - 50 nm
Specific surface: > 18 m²/g
Bulk density: 0.16 - 0.28 g/cm³
Purity: > 95.0 %
Controlled admixtures, %: Mg < 0.03; Na < 0.03; Fe < 0.1; Cu < 0.4; W < 0.2; Al (free) < 2.4
X-Ray analysis: 96 % of hexagonal, lattice parameters: a = 3.114Å, c = 4.986Å

RN-PL-PJ-AlN-5g	5 g
RN-PL-PJ-AlN-25g	25 g
RN-PL-PJ-AlN-100g	100 g

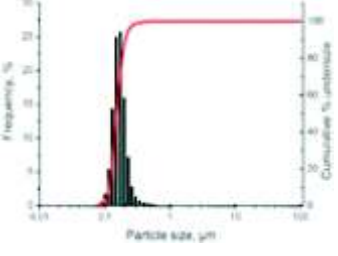
AlN - Nanopowder



Average particle size: ca. 20 nm
Specific surface: 80±7 m²/g
Purity: > 92%
Controlled admixtures, %: C<0.1; O<7; Fe<0.02; Si<0.01

RN-PL-HK-AlN-5g	5 g
RN-PL-HK-AlN-25g	25 g
RN-PL-HK-AlN-100g	100 g

Boron Nitride, cubic
BN - Nanopowder



Particle size full range: 80-450 nm
Average particle size: 165±15 nm
Specific surface: > 11 m²/g
Content of cubic phase: > 99.0%
Controlled admixtures, %: Mg < 0.35;
Si < 0.14; Fe < 0.04; Ca < 0.03; Cr < 0.03

RN-PL-IS-CBN-5g	5 g
RN-PL-IS-CBN-25g	25 g
RN-PL-IS-CBN-100g	100 g

Boron Nitride, hexagonal

New

BN - Nanopowder
Particle size full range: 100-1000 nm
Average particle size: 500 ± 100 nm
Specifi c surface: 23 ± 3 m²/g
Purity: > 98,5%; Nitrogen content > 55%
Controlled admixtures, %: O < 1; C < 0,1;
B2O3 < 0,1

RN-PL-H-HBN-5g	5 g
RN-PL-H-HBN-25g	25 g
RN-PL-H-HBN-100g	100 g

Boron Carbide

B_4C - Nanopowder

Average particle size: 60 nm
Purity: > 99.5%
Controlled admixtures: Fe 0.0001%, Ni 0.0002%, Al 0.0002%, O <0.08%
Free Carbon 0.002%

RN-PL-SS -B4C-5g	5 g
RN-PL-SS -B4C-25g	25 g
RN-PL-SS -B4C-100g	100 g

Gallium Antimonide, hydrophobic

GaSb - Nanopowder

Average particle size: 4 nm
Forms clear colloidal solutions in ethanol and non-polar solvents. GaSb has highest known refractive index among non-metallic compounds. It can be used as a component of photoresists and other composites where high refractive index is desirable.

RN-PL-GaSb-10mg	10 mg
RN-PL-GaSb-50mg	50 mg

Gallium Arsenide, hydrophobic

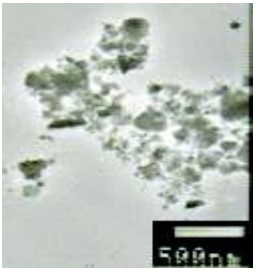
GaAs - Nanopowder

Average particle size: 4 nm
Forms clear colloidal solutions in non-polar solvents.

RN-PL-GaAs-10mg	10 mg
RN-PL-GaAs-50mg	50 mg

Silicon Carbide

SiC - Nanopowder

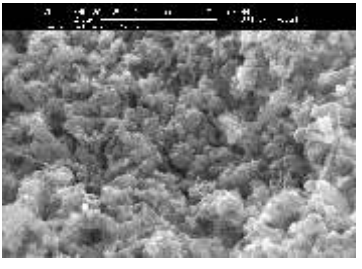


Shape: cubic, hexagonal, fragmental, single fibers
Particle size full range: 5 - 250 nm
Average particle size: 25 - 50 nm
Specific surface: > 18 m^2/g
Bulk density: 0.23 - 0.35 g/cm^3
Purity: > 98.6%

Controlled admixtures, %: Al < 0.03; Mg < 0.03; Na < 0.03; Fe < 0.1; Cu < 0.4; W < 0.2
X-Ray: SiC hexagonal, 98%, lattice: a = 3.082 Å, b = 3.082 Å, c = 15.1006 Å SiC hexagonal, 2%, lattice: a = 3.082 Å, b = 3.082 Å, c = 37.70 Å

RN-PL-PJ-SiC-5g	5 g
RN-PL-PJ-SiC-25g	25 g
RN-PL-PJ-SiC-100g	100 g

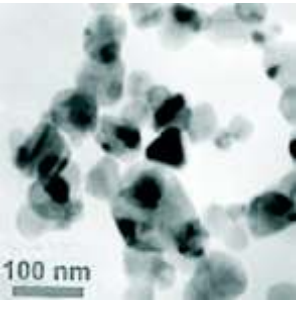
SiC - Nanopowder



Average particle size: 150-200 nm
Specific surface: 9.8 ± 0.8 m^2/g Purity: > 99.5%
Controlled admixtures, %: C (free) < 0.05;
Si (free) < 0.05; SiO_2
< 0.1 X-ray analysis: cubic phase >99%.
Zeta-potential: -26 mV

RN-PL-CT-SiC-5g	5 g
RN-PL-CT-SiC-25g	25 g
RN-PL-CT-SiC-100g	100 g

SiC - Nanopowder



Average particle size: 20±7 nm. Cubic phase.
Specific surface: 80 ± 7 m^2/g
Controlled admixtures, %: C(free) < 0.75;
Si(free)< 0.25; O < 1.25; Cl < 0.25
Purity: > 98.0%

RN-PL-HK-SiC-5g	5 g
RN-PL-HK-SiC-25g	25 g
RN-PL-HK-SiC-100g	100 g

Silicon nitride

Si_3N_4 Nanopowder, amorphous

Average particle size: 20±5 nm.

Specific surface area: 110±5 m²/g Purity: > 89%

Controlled admixtures, %: Si(free) < 1; Cl < 0.25; O < 12

RN-PL-HK-AMO-SiN-5g	5 g
RN-PL-HK-AMO-SiN-25g	25 g
RN-PL-HK-AMO-SiN-100g	100 g

Si_3N_4 Nanopowder, alpha

Average particle size: 20±5 nm. Specific surface area: 80±10 m²/g

Purity: > 97%

Controlled admixtures, %: Si(free) < 0.25; C(free) < 0.75; Cl < 0.25; O < 1.25

RN-PL-HK-ALP-SiN-5g	5 g
RN-PL-HK-ALP-SiN-25g	25 g
RN-PL-HK-ALP-SiN-100g	100 g

Si_3N_4 Nanopowder

Average particle size: 25±5 nm

Specific surface area: 75±5 m²/g

Controlled admixtures, %: Fe < 0.05; Ca < 0.05; Al < 0.1

RN-PL-N-SiN-5g	5 g
RN-PL-N-SiN-25g	25 g
RN-PL-N-SiN-100g	100 g

Titanium Boride

TiB_2- Nanopowder

Purity: > 98.5%

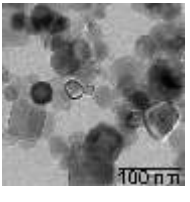
Particle size: D90 < 1µm

Controlled admixtures, %: B_2O_3 ≤ 0.1; C < 0.3; Fe < 0.1; Si < 0.2

RN-PL-A-TiB-5g	5 g
RN-PL-A-TiB-25g	25 g
RN-PL-A-TiB-100g	100 g

Titanium Carbide

TiC - Nanopowder



Purity: > 97.0%

Average particle size: 20-40 nm. Specific surface area: 50±7 m²/g

Controlled admixtures, %: Si < 0.01; C (free) < 0.75; O < 1.25

RN-PL-HK-TiC-5g	5 g
RN-PL-HK-TiC-25g	25 g
RN-PL-HK-TiC-100g	100 g

Titanium Carbonitride

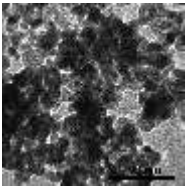
$TiC_{0.5}N_{0.5}$ - Nanopowder

Average particle size: 40±5 nm

Specific surface area: 30±5 m²/g

Controlled admixtures, %: Fe < 0.1; Si < 0.05; Ni < 0.1

RN-PL-N-TiCN-5g	5 g
RN-PL-N-TiCN-25g	25 g
RN-PL-N-TiCN-100g	100 g



Titanium Nitride

TiN - Nanopowder

Average particle size: 50±5 nm; Specific surface area: 22±5 m^2/g

Controlled admixtures, %: Fe < 0.1; Si < 0.05; Ni < 0.1

X-ray analysis: cubic phase > 99%

RN-PL-N-TiN-5g	5 g
RN-PL-N-TiN-25g	25 g
RN-PL-N-TiN-100g	100 g

TiN - Nanopowder

Average particle size: 20±5 nm; Specific surface area: 80±5 m²/g

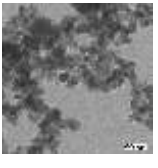
Controlled admixtures, %: O < 3; C < 0.1; Fe < 0.02; Si < 0.01

X-ray analysis: cubic phase > 97%

Forms dark transparent stable colloidal suspensions in water (see photo)

RN-PL-HK-TiN-5g	5 g
RN-PL-HK-TiN-25g	25 g
RN-PL-HK-TiN-100g	100 g

Zirconium Carbide



ZrC Nanopowder

Average particle size: 50±10nm; Specific surface area: 70±10 m²/g

X-ray analysis: cubic phase; Purity > 97%

Controlled admixtures, %: O < 1; C < 0.1; Fe < 0.02; Si < 0.01

RN-PL-HK-ZrC-5g	5 g
RN-PL-HK-ZrC-25g	25 g
RN-PL-HK-ZrC-100g	100 g

Non-oxide NanoCeramics Blends

Composite ceramics based on this mixture have the highest armour properties, the powder can be used in other composites for their wear resistance increase.

Titanium Boride - Boron Carbide

TiB_2/ BC_4 (20 / 80)- Nanopowder mixture

Composition: TiB_2> 19.7%; BC_4 > 77%

Controlled admixtures, %: B_2O_3 ≤ 0.18; C < 2.46; Fe < 0.02; Si < 0.04

RN-PL-A-BCTB-5g	5 g
RN-PL-A-BCTB-25g	25 g
RN-PL-A-BCTB-100g	100 g

Titanium Boride - Boron Carbide - Tungsten Boride

TiB_2/ BC_4 / WB_2(30 / 10 / 60)- Nanopowder mixture

Composition: WB_2 ≥ 59.4 %; TiB_2 ≥ 29.5 %; BC_4 ≥ 9.6 %

Controlled admixtures, %: B_2O_3 ≤ 0.11; C < 0.45; Fe < 0.1; Si < 0.15

RN-PL-A-WTB-5g	5 g
RN-PL-A-WTB-25g	25 g
RN-PL-A-WTB-100g	100 g

NanoMetals and Metalloids

Along with listed NanoMetals, many other metals were produced as trial batches in nanosized form, e.g. Stainless steel, Sn, Mn, Rare Earth Metals, W, Mo, V, Ag, Pt, Ir, Au. The same as in case of NanoCeramics, we are ready to produce almost any nanometal, also from material of customers.

Copper

Cu-nanopowder suspension in oil

Average particle size: 40±5 nm

Specific surface area: 15±5 m^2/g

Controlled admixtures, %: metal impurities < 0.1 including Fe < 0.02

Oil: 20 wt.%, Oleic acid (stabilizer): 3 wt.%

RN-PL-Cu-O-5g	5 g
RN-PL-Cu-O-25g	25 g
RN-PL-Cu-O-100g	100 g

Cu-nanopowder suspension in ethanol

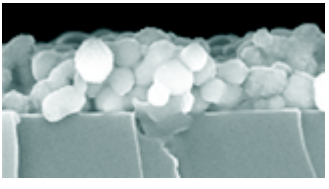
Average particle size: 40±5 nm

Specific surface area: 15±5 m^2/g

Controlled admixtures, %: metal impurities < 0.1 including Fe < 0.02

Ethanol: 30% by total weight, Oleic acid (stabilizer): 3 wt.%

RN-PL-Cu-E-5g	5 g
RN-PL-Cu-E-25g	25 g
RN-PL-Cu-E-100g	100 g



Cu-nanopowder, dry

NEW

Particle size: 100±5 nm

RN-PL-Cu-T100-5g	5 g
RN-PL-Cu-T100-25g	25 g
RN-PL-Cu-T100-100g	100 g

Particle size: 20±10 nm

RN-PL-Cu-M20-5g	5 g
RN-PL-Cu-M20-25g	25 g
RN-PL-Cu-M20-100g	100 g

Copper-Tin alloy (90:10)

Purity: > 97.0 %

Particle shape: spheric

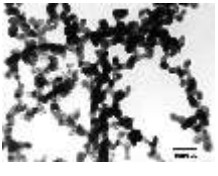
Average particle size: 70 - 80 nm.

Specific surface area: > 10 m^2/g

Bulk density: > 0.8 g/cm^3

Controlled admixtures, %: Fe < 0.1; W < 0.2

RN-PL-CuSn-5g	5 g
RN-PL-CuSn-25g	25 g

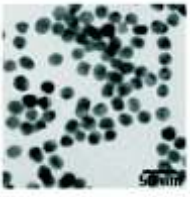


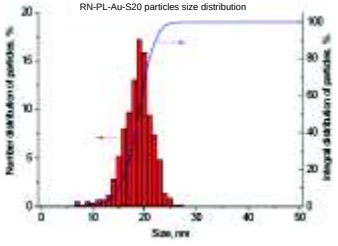
Gold Nanoparticles

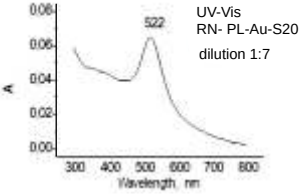
Colloidal solution in water, 0.05 mg/mL

Average particle size: 20±3 nm

pH ca. 8.0







RN-PL-Au-S20-05mg	10 mL
RN-PL-Au-S20-5mg	100 mL

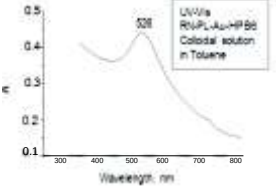
Au - dry nanopowder, hydrophobic

Forms colloidal solutions in non-polar solvents.

Monodisperse nanoparticles, can be used for 2-D and 3-D structures build-up.

Average particle size: ca. 2 nm.

RN-PL-Au-HPB2-10mg	10 mg
RN-PL-Au-HPB2-50mg	50 mg



Average particle size: ca. 4 nm.

RN-PL-Au-HPB4-10mg	10 mg
RN-PL-Au-HPB4-50mg	50 mg

Average particle size: 6-7 nm.

RN-PL-Au-HPB6-10mg	10 mg
RN-PL-Au-HPB6-50mg	50 mg

Gold Nanoparticles, stabilized with tannic acid

Au concentration: 0.05 mg/mL (corresponds to 0.01% HAuCl), aq. solution

Admixtures, %: tannic acid < 0.01; sodium citrate < 0.04

RN-PL-Au-TAN4-25m	Average Particle size 3-4 nm	25 mL
RN-PL-Au-TAN7-25m	Average Particle size 7-8 nm	25 mL
RN-PL-Au-TAN14-25m	Average Particle size 13-15 nm	25 mL

Gold Nanoparticles, 50 nm, 500 ppm in water

Au concentration: 5 mg/mL, aq. solution

Admixtures: citrate, cell-culture bovine gelatine

RN-PL-Au50-05p-1m	1 mL
RN-PL-Au50-05p-10m	10 mL

Iron

Fe - Nanopowder with **hydrophilic** carbon shell

Purity: > 97.0 %

Particle shape: spherical

Average particle size: 30 - 60 nm. Particle size full range: 5 - 200 nm

Fe-state: ferromagnetic

Specific surface area: > 12 m^2/g Bulk density: > 0.5 g/cm^3

Functionality on C-shell: -COOH, -OH

C-content: 25 - 30 %. Controlled admixtures, %: Cu < 0.4; W < 0.2

RN-PL-HPL-Fe-5g	5 g
RN-PL-HPL-Fe-25g	25 g

Fe - Nanopowder with hydrophobic carbon shell

Purity: > 97.0%

Particle shape: spherical

Average particle size: 30 - 60 nm. Particle size full range: 5 - 200 nm

Fe-state: ferromagnetic

Specific surface area: > 12 m^2/g, Bulk density: > 0.5 g/cm^3

C-content: 11-14 %. Controlled admixtures, %: Cu < 0.4; W < 0.2

RN-PL-HPB-Fe-5g	5 g
RN-PL-HPB-Fe-25g	25 g

Nickel Nanoparticles

New

Average particle size: ca. 50 nm

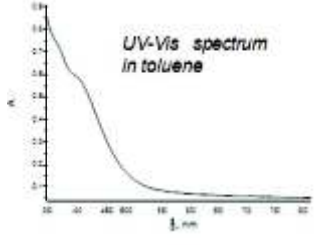
RN-PL-Ni50-1g	1 mg
RN-PL-Ni50-5g	5 mg

Palladium Nanoparticles, hydrophobic

Average particle size: ca. 2 nm. Form colloidal solutions in non-polar solvents.

Monodisperse nanoparticles, can be used for 2-D and 3-D structures build-up.

RN-PL-Pd-HPB2-10mg	10mg
RN-PL-Pd-HPB2-50mg	50 mg



Palladium Nanoparticles, hydrophobic

Average particle size: ca. 6-7 nm.

Form colloidal solutions in non-polar solvents.

Monodisperse nanoparticles, can be used for

2-D and 3-D structures build-up.

RN-PL-Pd-HPB6-10mg	10 mg
RN-PL-Pd-HPB6-50mg	50 mg

Platinum Nanoparticles, hydrophilic

Average particle size: ca. 3-4 nm

Form aqueous colloidal solutions.

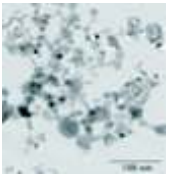
RN-PL-Pt-3-10mg	10 mg
RN-PL-Pt-3-50mg	50 mg
RN-PL-Pt-3-100mg	100 mg

Silicon Nanoparticles, Cubic phase.

Particle size: 100±5 nm Purity: > 99%.

Specific surface: > 80m²/g,

Bulk density: ca. 0.08 g/cm³

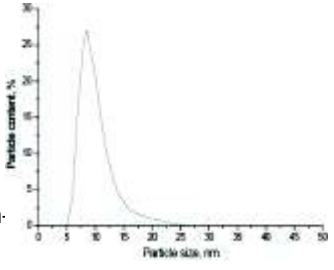


RN-PL-Si-T100-5g	5 g
RN-PL-Si-T100-25g	25 g

Silver Nanoparticles, colloidal solution in water

Average particle size: ca. 10 nm

Concentration: 0.1 mg/mL

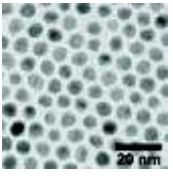


RN-PL-Ag-S10-1mg	10 mL
RN-PL-Ag-S10-10mg	100 mL
RN-PL-Ag-S10-50mg	500 mL

Ag - dry nanopowder, hydrophobic

Average particle size: ca. 6-7 nm. Forms colloidal solutions in non-solvents. Monodisperse nanoparticles,

can be used for 2-D and 3-D structures build-up. Absorption maximum ca. 445 nm



RN-PL-Ag-HPB7-10mg	10 mg
RN-PL-Ag-HPB7-50mg	50 mg
RN-PL-Ag-HPB7-200mg	200 mg

Ag - dry nanopowder, hydrophilic

Average particle size: ca. 100-150 nm

RN-PL-Ag150-10mg	10 mg
RN-PL-Ag150-50mg	50 mg
RN-PL-Ag150-100mg	100 mg

Ag-dry nanopowder, hydrophillic

NEW

Average particle size: ca 20 nm, stabilized by Agar-Agar

RN-PL-Ag20-10g	10 g
RN-PL-Ag20-50g	50 g
RN-PL-Ag20-100g	100 g

NanoWires

Metallic nanowires of different elements have been synthesized. Besides of those present in this catalogue, we can perform custom synthesis of other nanowires like Au, Ni-Co and Ni-Fe of various compositions etc.

Cobalt Nanowires

Average diameter: 200-300 nm

Length: up to 200 µm

RN-PL-CoW200-10mg	10 mg
RN-PL-CoW200-100mg	100 mg
RN-PL-CoW200-1g	1 g

Copper Nanowires

Average diameter: 40-50 nm

Length: up to 50 µm

RN-PL-CuW50-10mg	10 mg
RN-PL-CuW50-50mg	50 mg
RN-PL-CuW50-200mg	200 mg

Lead Nanowires

Average diameter: 80±20 nm

Length: up to several millimetres. Superconductor at 4K

RN-PL-PbW100-10mg	10 mg
RN-PL-PbW100-50mg	50 mg
RN-PL-PbW100-200mg	200 mg

Nickel Nanowires

Average diameter: 200-300 nm

Length: up to 200 µm

RN-PL-NiW200-10mg	10 mg
RN-PL-NiW200-100mg	100 mg
RN-PL-NiW200-1g	1 g

Silver Nanowires

Average diameter: 40-50 nm; Length: up to 50 µm

RN-PL-AgW50-10mg	10 mg
RN-PL-AgW50-50mg	50 mg

Average diameter: 100±20 nm; Length: up to 50 µm

RN-PL-AgW100-10mg	10 mg
RN-PL-AgW100-50mg	50 mg

Average diameter: 200±40 nm; Length: up to 50 µm

RN-PL-AgW200-10mg	10 mg
RN-PL-AgW200-50mg	50 mg

New

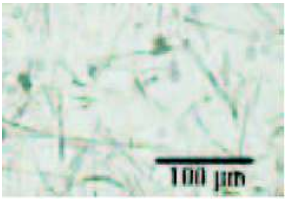
Silver Nanowires, dispersion in isopropanol

Supplied as 0,5wt.% dispersion in isopropanol

RN-PL-AgW50-IP-25m	50 nm	25 mL, 5 g/L
RN-PL-AgW100-IP-25m	100 nm	25 mL, 5 g/L
RN-PL-AgW200-IP-25m	200 nm	25 mL, 5 g/L

TiO_2Nanowires

Length full range: 0,5-100 µm
Diameter: 50-100 nm
Phase: anatase
Dry powder



RN-PL-TiOW50-100mg	100 mg
RN-PL-TiOW50-500mg	500 mg
RN-PL-TiOW50-1g	1 g

Nano- and micro-Salts

Inorganic carbonate microparticles soluble at low pH values or in complexing agents such as EDTA. Among various applications, they are used for production of polyelectrolyte multilayer capsules finding various applications from drug carriers to microreactors.

Calcium Carbonate Nanoparticles

$CaCO_3$ nanopowder

Particle shape: cubic

Primary particle average size: 90±15 nm

Specific surface: ca. 20 m^2/g

Bulk Density: ca. 0.4 g/cm^3

RN-PL-CACOU-25g	25 g
RN-PL-CACOU-100g	100 g

Calcium Carbonate Microparticles

Absorbs polyelectrolytes and proteins in mesopores strongly.

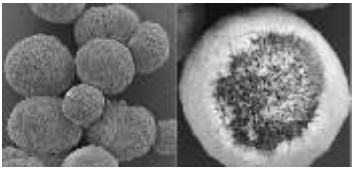
Purity: > 99.0%

Particles shape: mesoporous, spherical

Surface morphology: rough

Average particle size: ca. 6 µm

Specific surface: > 18 m^2/g



RN-PL-CA6-1g	1 g
RN-PL-CA6-5g	5 g
RN-PL-CA6-10g	10 g

Average particle size: ca. 3 µm

RN-PL-CA3-1g	1 g
RN-PL-CA3-5g	5 g
RN-PL-CA3-10g	10 g

Manganese Carbonate Microparticles

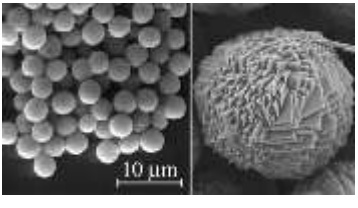
$MnCO_3$

Purity: > 99.0%

Particles shape: spherical

Surface morphology: rough

Particle size full range: 4 - 5 µm



RN-PL-MN5-1g	1 g
RN-PL-MN5-5g	5 g
RN-PL-MN5-10g	10 g

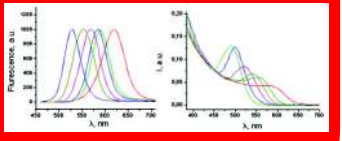
Average particle size: ca. 2-3 µm

RN-PL-MN3-1g	1 g
RN-PL-MN3-5g	5 g
RN-PL-MN3-10g	10 g

Quantum Dots

Luminescent inorganic nanocrystals (Q-dots). The emission wavelength is a function of the crystal size - crystals of the same chemistry can have the emission maxima in a wide range.

CdTe hydrophilic Q-dots are coated with -COOH groups and can be easily used for labeling purposes for chemical and biological applications. CdSe/ZnS and ZnCdSe/ZnS (core/shell type) Q-dots are hydrophobic and are soluble in most non-polar organic solvents.



CdTe Quantum Dots, powder, hydrophilic

Easily forms colloidal solutions in water. Terminated with -COOH group.

Ideal for labeling purposes. Coupling with -NH_2groups can be achieved through EDC-mediated esterefication.

General labeling procedure for proteins

(adopted from Wang et al. Nanoletters 2002, vol. 2, No. 8, 817-822):

Reaction mixture containing 0.1 µM/mL CdTe quantum dots, 2 mg/mL protein, 1 mg/mL sulfo-NHS (CAS# 106627-54-7), 10 mg/mL EDC (CAS# 25952-53-8) in pH 7.0 PBS buffer is prepared and stored for 2-4 h at room temperature and then stored at 4°C overnight.

The precipitate (unconjugated Q-dots) if any is removed by centrifugation. The stock of ready-to-use product should be stored at 4°C. Optionally it can be dialyzed on a membrane with MWCO of 12000-14000 against pH 7.0 PBS buffer and stored at 4°C.

Emission wavelength may slightly shift after labeling procedure.

510 ± 5 nm λ emission maximum. Particles molar weight ca. 3200 g/mol; 1,5 nm (lit.)

RN-PL-QDN-510-5mg	5 mg
RN-PL-QDN-510-10mg	10 mg
RN-PL-QDN-510-25mg	25 mg
RN-PL-QDN-510-50mg	50 mg

520 ± 5 nm λ emission maximum. Particles molar weight ca. 16000 g/mol; 2,0 nm (lit.)

RN-PL-QDN-520-5mg	5 mg
RN-PL-QDN-520-10mg	10 mg
RN-PL-QDN-520-25mg	25 mg
RN-PL-QDN-520-50mg	50 mg

530 ± 5 nm λ emission maximum. Particles molar weight ca. 20000 g/mol; 2,2 nm (lit.)

RN-PL-QDN-530-5mg	5 mg
RN-PL-QDN-530-10mg	10 mg
RN-PL-QDN-530-25mg	25 mg
RN-PL-QDN-530-50mg	50 mg

540 ± 5 nm λ emission maximum. Particles molar weight ca. 25000 g/mol; 2,3 nm (lit.)

RN-PL-QDN-540-5mg	5 mg
RN-PL-QDN-540-10mg	10 mg
RN-PL-QDN-540-25mg	25 mg
RN-PL-QDN-540-50mg	50 mg

550 ± 5 nm λ emission maximum. Particles molar weight ca. 32000 g/mol; 2,6 nm (lit.)

RN-PL-QDN-550-5mg	5 mg
RN-PL-QDN-550-10mg	10 mg
RN-PL-QDN-550-25mg	25 mg
RN-PL-QDN-550-50mg	50 mg

560 ± 5 nm λ emission maximum. Particles molar weight ca. 55000 g/mol; 3,1 nm (lit.)

RN-PL-QDN-560-5mg	5 mg
RN-PL-QDN-560-10mg	10 mg
RN-PL-QDN-560-25mg	25 mg
RN-PL-QDN-560-50mg	50 mg

570 ± 5 nm λ emission maximum. Particles molar weight ca. 59000 g/mol; 3,1 nm (lit.)

RN-PL-QDN-570-5mg	5 mg
RN-PL-QDN-570-10mg	10 mg
RN-PL-QDN-570-25mg	25 mg
RN-PL-QDN-570-50mg	50 mg

580 ± 5 nm λ emission maximum. Particles molar weight ca. 67000 g/mo; 3,2 nm (lit.)l

RN-PL-QDN-580-5mg	5 mg
RN-PL-QDN-580-10mg	10 mg
RN-PL-QDN-580-25mg	25 mg
RN-PL-QDN-580-50mg	50 mg

590 ± 5 nm λ emission maximum. Particles molar weight ca. 71000 g/mol; 3,3 nm (lit.)

RN-PL-QDN-590-5mg	5 mg
RN-PL-QDN-590-10mg	10 mg
RN-PL-QDN-590-25mg	25 mg
RN-PL-QDN-590-50mg	50 mg

600 ± 5 nm λ emission maximum. Particles molar weight ca. 76000 g/mol; 3,4 nm (lit.)

RN-PL-QDN-600-5mg	5 mg
RN-PL-QDN-600-10mg	10 mg
RN-PL-QDN-600-25mg	25 mg
RN-PL-QDN-600-50mg	50 mg

610 ± 5 nm λ emission maximum. Particles molar weight ca. 81000 g/mol; 3,5 nm (lit.)

RN-PL-QDN-610-5mg	5 mg
RN-PL-QDN-610-10mg	10 mg
RN-PL-QDN-610-25mg	25 mg
RN-PL-QDN-610-50mg	50 mg

620 ± 5 nm λ emission maximum. Particles molar weight ca. 88000 g/mol; 3,6 nm (lit.)

RN-PL-QDN-620-5mg	5 mg
RN-PL-QDN-620-10mg	10 mg
RN-PL-QDN-620-25mg	25 mg
RN-PL-QDN-620-50mg	50 mg

630 ± 5 nm λ emission maximum. Particles molar weight ca. 89000 g/mol; 3,6 nm (lit.)

RN-PL-QDN-630-5mg	5 mg
RN-PL-QDN-630-10mg	10 mg
RN-PL-QDN-630-25mg	25 mg
RN-PL-QDN-630-50mg	50 mg

640 ± 5 nm λ emission maximum. Particles molar weight ca. 90000 g/mol; 3,7 nm (lit.)

RN-PL-QDN-640-5mg	5 mg
RN-PL-QDN-640-10mg	10 mg
RN-PL-QDN-640-25mg	25 mg
RN-PL-QDN-640-50mg	50 mg

650 ± 5 nm λ emission maximum. Particles molar weight ca. 103000 g/mol; 3,8 nm (lit.)

RN-PL-QDN-650-5mg	5 mg
RN-PL-QDN-650-10mg	10 mg
RN-PL-QDN-650-25mg	25 mg
RN-PL-QDN-650-50mg	50 mg

660 ± 5 nm λ emission maximum. Particles molar weight ca. 111000 g/mol; 3,9 nm (lit.)

RN-PL-QDN-660-5mg	5 mg
RN-PL-QDN-660-10mg	10 mg
RN-PL-QDN-660-25mg	25 mg
RN-PL-QDN-660-50mg	50 mg

670 ± 5 nm λ emission maximum. Particles molar weight ca. 124000 g/mo; 4,0 nm (lit.)l

RN-PL-QDN-670-5mg	5 mg
RN-PL-QDN-670-10mg	10 mg
RN-PL-QDN-670-25mg	25 mg
RN-PL-QDN-670-50mg	50 mg

680 ± 5 nm λ emission maximum. Particles molar weight ca. 146000 g/mol; 4,2 nm (lit.)

RN-PL-QDN-680-5mg	5 mg
RN-PL-QDN-680-10mg	10 mg
RN-PL-QDN-680-25mg	25 mg
RN-PL-QDN-680-50mg	50 mg

690 ± 5 nm λ emission maximum. Particles molar weight ca. 160000 g/mol; 4,3 nm (lit.)

RN-PL-QDN-690-5mg	5 mg
RN-PL-QDN-690-10mg	10 mg
RN-PL-QDN-690-25mg	25 mg
RN-PL-QDN-690-50mg	50 mg

700 ± 5 nm λ emission maximum. Particles molar weight ca. 177000 g/mol; 4,5 nm (lit.)

RN-PL-QDN-700-5mg	5 mg
RN-PL-QDN-700-10mg	10 mg
RN-PL-QDN-700-25mg	25 mg
RN-PL-QDN-700-50mg	50 mg

710 ± 5 nm λ emission maximum. Particles molar weight ca. 200000 g/mol; 4,7 nm (lit.)

RN-PL-QDN-710-5mg	5 mg
RN-PL-QDN-710-10mg	10 mg
RN-PL-QDN-710-25mg	25 mg
RN-PL-QDN-710-50mg	50 mg

720 ± 5 nm λ emission maximum. Particles molar weight ca. 230000 g/mol; 5,0 nm (lit.)

RN-PL-QDN-720-5mg	5 mg
RN-PL-QDN-720-10mg	10 mg
RN-PL-QDN-720-25mg	25 mg
RN-PL-QDN-720-50mg	50 mg

770 ± 5 nm λ emission maximum. Particles molar weight ca. 900000 g/mol; 7,8 nm (lit.)

RN-PL-QDN-770-5mg	5 mg
RN-PL-QDN-770-10mg	10 mg
RN-PL-QDN-770-25mg	25 mg
RN-PL-QDN-770-50mg	50 mg

780 ± 5 nm λ emission maximum. Particles molar weight ca. 1000000 g/mol; 8,6 nm (lit.)

RN-PL-QDN-780-5mg	5 mg
RN-PL-QDN-780-10mg	10 mg
RN-PL-QDN-780-25mg	25 mg
RN-PL-QDN-780-50mg	50 mg

CdSe/ZnS (core/shell) Quantum Dots, powder, hydrophobic

Highly luminescent semiconductor nanocrystals coated with hydrophobic organic molecules. Readily soluble in hexane, heptane, toluene, chloroform, tetrahydrofuran, pyridine. Not soluble in water, alcohols, ethers.

530 ± 5 nm λ emission maximum. Diameter of CdSe core 2,5 nm (lit.)

RN-PL-QD-O-530-5mg	5 mg
RN-PL-QD-O-530-10mg	10 mg
RN-PL-QD-O-530-25mg	25 mg

540 ± 5 nm λ emission maximum. Diameter of CdSe core 2,7 nm (lit.)

RN-PL-QD-O-540-5mg	5 mg
RN-PL-QD-O-540-10mg	10 mg
RN-PL-QD-O-540-25mg	25 mg

550 ± 5 nm λ emission maximum. Diameter of CdSe core 2,9 nm (lit.)

RN-PL-QD-O-550-5mg	5 mg
RN-PL-QD-O-550-10mg	10 mg
RN-PL-QD-O-550-25mg	25 mg

560 ± 5 nm λ emission maximum. Diameter of CdSe core 3,1 nm (lit.)

RN-PL-QD-O-560-5mg	5 mg
RN-PL-QD-O-560-10mg	10 mg
RN-PL-QD-O-560-25mg	25 mg

570 ± 5 nm λ emission maximum. Diameter of CdSe core 3,3 nm (lit.)

RN-PL-QD-O-570-5mg	5 mg
RN-PL-QD-O-570-10mg	10 mg
RN-PL-QD-O-570-25mg	25 mg

580 ± 5 nm λ emission maximum. Diameter of CdSe core 3,6 nm (lit.)

RN-PL-QD-O-580-5mg	5 mg
RN-PL-QD-O-580-10mg	10 mg
RN-PL-QD-O-580-25mg	25 mg

590 ± 5 nm λ emission maximum. Diameter of CdSe core 3,7 nm (lit.)

RN-PL-QD-O-590-5mg	5 mg
RN-PL-QD-O-590-10mg	10 mg
RN-PL-QD-O-590-25mg	25 mg

600 ± 5 nm λ emission maximum. Diameter of CdSe core 4,2 nm (lit.)

RN-PL-QD-O-600-5mg	5 mg
RN-PL-QD-O-600-10mg	10 mg
RN-PL-QD-O-600-25mg	25 mg

610 ± 5 nm λ emission maximum. Diameter of CdSe core 6,7 nm (lit.)

RN-PL-QD-O-610-5mg	5 mg
RN-PL-QD-O-610-10mg	10 mg
RN-PL-QD-O-610-25mg	25 mg

620 ± 5 nm λ emission maximum. Diameter of CdSe core 4,9 nm (lit.)

RN-PL-QD-O-620-5mg	5 mg
RN-PL-QD-O-620-10mg	10 mg
RN-PL-QD-O-620-25mg	25 mg

630 ± 5 nm λ emission maximum. Diameter of CdSe core 5,4 nm (lit.)

RN-PL-QD-O-630-5mg	5 mg
RN-PL-QD-O-630-10mg	10 mg
RN-PL-QD-O-630-25mg	25 mg

640 ± 5 nm λ emission maximum. Diameter of CdSe core 6,2 nm (lit.)

RN-PL-QD-O-640-5mg	5 mg
RN-PL-QD-O-640-10mg	10 mg
RN-PL-QD-O-640-25mg	25 mg

650 ± 5 nm λ emission maximum. Diameter of CdSe core 6,5 nm (lit.)

RN-PL-QD-O-650-5mg	5 mg
RN-PL-QD-O-650-10mg	10 mg
RN-PL-QD-O-650-25mg	25 mg

ZnCdSe/ZnS (core/shell)Quantum Dots, powder, hydrophobic

Highly luminescent semiconductor nanocrystals coated with hydrophobic organic molecules. Readily soluble in hexane, heptane, toluene, chloroform, tetrahydrofuran, pyridine. Not soluble in water, alcohols, ethers.

440 ± 5 nm λ emission maximum. Diameter of ZnCdSe core ca. 6 nm (lit.)

RN-PL-QD-O-440-5mg	5 mg
RN-PL-QD-O-440-10mg	10 mg
RN-PL-QD-O-440-25mg	25 mg

480 ± 5 nm λ emission maximum. Diameter of ZnCdSe core ca. 6 nm (lit.)

RN-PL-QD-O-480-5mg	5 mg
RN-PL-QD-O-480-10mg	10 mg
RN-PL-QD-O-480-25mg	25 mg

ZnCdSeS alloyed Quantum Dots, low-Cd, hydrophobic

Alloyed QDs are the newest generation of low-cadmium, highly luminescent semi-conductor nanocrystals with improved stability and compatibility with composites. Coated with hydrophobic organic molecules. Readily soluble in hexane, heptane, toluene, chloroform, tetrahydrofuran, pyridine. Diameter ca. 6 nm. Supplied dry..

470 ± 5 nm λ emission maximum

RN-PL-QD-OA-470-10mg	10 mg
RN-PL-QD-OA-470-25mg	25 mg
RN-PL-QD-OA-470-100mg	100 mg

480 ± 5 nm λ emission maximum

RN-PL-QD-OA-480-10mg	10 mg
RN-PL-QD-OA-480-25mg	25 mg
RN-PL-QD-OA-480-100mg	100 mg

490 ± 5 nm λ emission maximum

RN-PL-QD-OA-490-10mg	10 mg
RN-PL-QD-OA-490-25mg	25 mg
RN-PL-QD-OA-490-100mg	100 mg

500 ± 5 nm λ emission maximum

RN-PL-QD-OA-500-10mg	10 mg
RN-PL-QD-OA-500-25mg	25 mg
RN-PL-QD-OA-500-100mg	100 mg

510 ± 5 nm λ emission maximum

RN-PL-QD-OA-510-10mg	10 mg
RN-PL-QD-OA-510-25mg	25 mg
RN-PL-QD-OA-510-100mg	100 mg

520 ± 5 nm λ emission maximum

RN-PL-QD-OA-520-10mg	10 mg
RN-PL-QD-OA-520-25mg	25 mg
RN-PL-QD-OA-520-100mg	100 mg

530 ± 5 nm λ emission maximum

RN-PL-QD-OA-530-10mg	10 mg
RN-PL-QD-OA-530-25mg	25 mg
RN-PL-QD-OA-530-100mg	100 mg

540 ± 5 nm λ emission maximum

New

RN-PL-QD-OA-540-10mg	10 mg
RN-PL-QD-OA-540-25mg	25 mg
RN-PL-QD-OA-540-100mg	100 mg

550 ± 5 nm λ emission maximum

RN-PL-QD-OA-550-10mg	10 mg
RN-PL-QD-OA-550-25mg	25 mg
RN-PL-QD-OA-550-100mg	100 mg

560 ± 5 nm λ emission maximum

RN-PL-QD-OA-560-10mg	10 mg
RN-PL-QD-OA-560-25mg	25 mg
RN-PL-QD-OA-560-100mg	100 mg

570 ± 5 nm λ emission maximum

RN-PL-QD-OA-570-10mg	10 mg
RN-PL-QD-OA-570-25mg	25 mg
RN-PL-QD-OA-570-100mg	100 mg

580 ± 5 nm λ emission maximum

RN-PL-QD-OA-580-10mg	10 mg
RN-PL-QD-OA-580-25mg	25 mg
RN-PL-QD-OA-580-100mg	100 mg

590 ± 5 nm λ emission maximum

RN-PL-QD-OA-590-10mg	10 mg
RN-PL-QD-OA-590-25mg	25 mg
RN-PL-QD-OA-590-100mg	100 mg

600 ± 5 nm λ emission maximum

RN-PL-QD-OA-600-10mg	10 mg
RN-PL-QD-OA-600-25mg	25 mg
RN-PL-QD-OA-600-100mg	100 mg

610 ± 5 nm λ emission maximum

RN-PL-QD-OA-610-10mg	10 mg
RN-PL-QD-OA-610-25mg	25 mg
RN-PL-QD-OA-610-100mg	100 mg

QUANTUM DOTS KITS-HYDROPHILIC

Hydrophilic Zn-Cu-In-S/ZnS Cd-free QDK
Dry Powder, Soluble in water

RN-PL-QD-WCF-Kit10	4X10 mg
RN-PL-QD-WCF-Kit25	4X25 mg
RN-PL-QD-WCF-Kit100	4X100 mg

Hydrophilic, alloyed ZnCdSeS QDK

RN-PL-QD-WA-Kit10	5X10 mg
RN-PL-QD-WA-Kit25	5X25 mg
RN-PL-QD-WA-Kit100	5X100 mg

PEROVSKITE QD, Cd FREE, HYDROPHOBIC

450±15 nm λ emission maximum

RN-PL-QD-PSK-450-5mg	5 mg
RN-PL-QD-PSK-450-50mg	50 mg
RN-PL-QD-PSK-450-500mg	500 mg

480±15 nm λ emission maximum

RN-PL-QD-PSK-480-5mg	5 mg
RN-PL-QD-PSK-480-50mg	50 mg
RN-PL-QD-PSK-480-500mg	500 mg

510±15 nm λ emission maximum

RN-PL-QD-PSK-510-5mg	5 mg
RN-PL-QD-PSK-510-50mg	50 mg
RN-PL-QD-PSK-510-500mg	500 mg

530±15 nm λ emission maximum

RN-PL-QD-PSK-530-5mg	5 mg
RN-PL-QD-PSK-530-50mg	50 mg
RN-PL-QD-PSK-530-500mg	500 mg

550±15 nm λ emission maximum

RN-PL-QD-PSK-550-5mg	5 mg
RN-PL-QD-PSK-550-50mg	50 mg
RN-PL-QD-PSK-550-500mg	500 mg

ZnCdSeS QD, low-Cd, Hydrophilic, QD-WA
Diameter ca. 6Nm, Soluble Powder

470±5 nm λ emission maximum

RN-PL-QD-WA-470-10mg	10 mg
RN-PL-QD-WA-470-25mg	25 mg
RN-PL-QD-WA-470-100mg	100 mg

480±5nm λ emission maximum

RN-PL-QD-WA-480-10mg	10 mg
RN-PL-QD-WA-480-25mg	25 mg
RN-PL-QD-WA-480-100mg	100 mg

490±5nm λ emission maximum

RN-PL-QD-PSK-490-5mg	5 mg
RN-PL-QD-PSK-490-50mg	50 mg
RN-PL-QD-PSK-490-500mg	500 mg

500±5nm λ emission maximum

RN-PL-QD-PSK-500-5mg	5 mg
RN-PL-QD-PSK-500-50mg	50 mg
RN-PL-QD-PSK-500-500mg	500 mg

510±5nm λ emission maximum

RN-PL-QD-PSK-510-5mg	5 mg
RN-PL-QD-PSK-510-50mg	50 mg
RN-PL-QD-PSK-510-500mg	500 mg

520±5nm λ emission maximum

RN-PL-QD-PSK-520-5mg	5 mg
RN-PL-QD-PSK-520-50mg	50 mg
RN-PL-QD-PSK-520-500mg	500 mg

530±5nm λ emission maximum

RN-PL-QD-PSK-530-5mg	5 mg
RN-PL-QD-PSK-530-50mg	50 mg
RN-PL-QD-PSK-530-500mg	500 mg

540±5nm λ emission maximum

RN-PL-QD-WA-540-10mg	10 mg
RN-PL-QD-WA-540-25mg	25 mg
RN-PL-QD-WA-540-100mg	100 mg

550±5nm λ emission maximum

RN-PL-QD-WA-550-10mg	10 mg
RN-PL-QD-WA-550-25mg	25 mg
RN-PL-QD-WA-450-100mg	100 mg

560±5nm λ emission maximum

RN-PL-QD-PSK-560-5mg	5 mg
RN-PL-QD-PSK-560-50mg	50 mg
RN-PL-QD-PSK-560-500mg	500 mg

570±5nm λ emission maximum

RN-PL-QD-PSK-570-5mg	5 mg
RN-PL-QD-PSK-570-50mg	50 mg
RN-PL-QD-PSK-570500mg	500 mg

580±5nm λ emission maximum

RN-PL-QD-PSK-580-5mg	5 mg
RN-PL-QD-PSK-580-50mg	50 mg
RN-PL-QD-PSK-580-500mg	500 mg

590±5nm λ emission maximum

RN-PL-QD-PSK-590 5mg	5 mg
RN-PL-QD-PSK-590-50mg	50 mg
RN-PL-QD-PSK-590-500mg	500 mg

600±5nm λ emission maximum

RN-PL-QD-PSK-600 5mg	5 mg
RN-PL-QD-PSK-600-50mg	50 mg
RN-PL-QD-PSK-600-500mg	500 mg

610±5nm λ emission maximum

RN-PL-QD-PSK-610-5mg	5 mg
RN-PL-QD-PSK-610-50mg	50 mg
RN-PL-QD-PSK-610-500mg	500 mg

620±5nm λ emission maximum

RN-PL-QD-WA-620-10mg	10 mg
RN-PL-QD-WA-620-25mg	25 mg
RN-PL-QD-WA-620-100mg	100 mg

630±5nm λ emission maximum

RN-PL-QD-WA-630-10mg	10 mg
RN-PL-QD-WA-630-25mg	25 mg
RN-PL-QD-WA-630-100mg	100 mg

Zn-Cu-In-S/ZnS QD, Cd FREE, HYDROPHILIC

Emission Peak Width ca. 100 nm
Large Strokes Shift ca. 120 nm
Particle Size: 4-5 nm
Soluble Powder Form

530±15nm λ emission maximum

RN-PL-QD-WCF-530-25mg	25 mg
RN-PL-QD-WCF-530-100mg	100 mg
RN-PL-QD-WCF-530-250mg	250 mg

560±15 nm λ emission maximum

RN-PL-QD-WCF-560-25mg	25 mg
RN-PL-QD-WCF-560-100mg	100 mg
RN-PL-QD-WCF-560-250mg	250 mg

590±15nm λ emission maximum

RN-PL-QD-WCF-590-25mg	25 mg
RN-PL-QD-WCF-590-100mg	100 mg
RN-PL-QD-WCF-590-250mg	250 mg

610±15nm λ emission maximum

RN-PL-QD-WCF-610-25mg	25 mg
RN-PL-QD-WCF-610-100mg	100 mg
RN-PL-QD-WCF-610-250mg	250 mg

650±5nm λ emission maximum

RN-PL-QD-WCF-650-25mg	25 mg
RN-PL-QD-WCF-650-100mg	100 mg
RN-PL-QD-WCF-650-250mg	250 mg

700±5nm λ emission maximum

RN-PL-QD-WCF-700-25mg	25 mg
RN-PL-QD-WCF-700-100mg	100 mg
RN-PL-QD-WCF-700-250mg	250 mg

Zn-Cu-In-S/ZnS Quantum Dots, cadmium free, hydrophobic

Non-toxic luminescent Zn-Cd-In-S / ZnS (core / shell) quantum dots coated with hydrophobic organic ligands. Readily soluble in hexane, heptane, toluene, chlo-roform, tetrahydrofuran, pyridine. Not soluble in water, alcohols, ethers. Emission peak width (FWHM) ca. 100 nm. Large Stokes shift (ca. 120 nm). Typical quan-tum yield 40-70%. Particle size: 4-5 nm. Supplied as a readily soluble powder

530 ± 15 nm λ emission maximum

RN-PL-QD-CF-530-25mg	25 mg
RN-PL-QD-CF-530-100mg	100 mg
RN-PL- QD-CF-530-250mg	250 mg

560 ± 15 nm λ emission maximum

RN-PL-QD-CF-560-25mg	25 mg
RN-PL-QD-CF-560-100mg	100 mg
RN-PL- QD-CF-560-250mg	250 mg

590 ± 15 nm λ emission maximum

RN-PL-QD-CF-590-25mg	25 mg
RN-PL-QD-CF-590-100mg	100 mg
RN-PL- QD-CF-590-250mg	250 mg

610 ± 15 nm λ emission maximum

RN-PL-QD-CF-610-25mg	25 mg
RN-PL-QD-CF-610-100mg	100 mg
RN-PL- QD-CF-610-250mg	250 mg

650 ± 25 nm λ emission maximum

RN-PL-QD-CF-650-25mg	25 mg
RN-PL-QD-CF-650-100mg	100 mg
RN-PL- QD-CF-650-250mg	250 mg

700 ± 25 nm λ emission maximum

RN-PL-QD-CF-700-25mg	25 mg
RN-PL-QD-CF-700-100mg	100 mg
RN-PL- QD-CF-700-250mg	250 mg

Quantum Dots Kit

Get quantum dots of different colours

Hydrophilic CdTe Quantum Dots Kit

One kit of four types of quantum dots, 5 mg, 10 mg or 50 mg each type:
Supplied as dry powder. Soluble in water

Green - $\lambda_{emission\ max}$ 510-550 nm
Yellow - $\lambda_{emission\ max}$ 560-580 nm
Orange - $\lambda_{emission\ max}$ 590-620 nm
Red - $\lambda_{emission\ max}$ 630-650 nm
Ruby - $\lambda_{emission\ max}$ 660-700 nm

RN-PL-QDN-Kit5	5 x 5 mg
RN-PL-QDN-Kit10	5 x 10 mg
RN-PL-QDN-Kit50	5 x 50 mg

Hydrophobic CdSe/ZnS Quantum Dots Kit

Blue - $\lambda_{emission\ max}$ 450-500nm
Green -$\lambda_{emission\ max}$ 510-550nm
Yellow - $\lambda_{emission\ max}$ 560-580nm
Orange -$\lambda_{emission\ max}$ 590-620nm
Red -$\lambda_{emission\ max}$ 630-650nm

RN-PL-QDN-Kit5	5 x 5 mg
RN-PL-QDN-Kit10	5 x 10 mg
RN-PL-QDN-Kit50	5 x 50 mg

Hydrophobic alloyed ZnCdSeS Quantum Dots Kit

One kit of fi ve types of quantum dots, 10 mg, 25 mg or 100 mg each type: Soluble in hexane, toluene etc.

Blue - $\lambda_{emission\ max}$ 470-480nm
Green - $\lambda_{emission\ max}$ 490-500nm
Yellow - $\lambda_{emission\ max}$ 510-550nm
Orange - $\lambda_{emission\ max}$ 560-580nm
Red - $\lambda_{emission\ max}$ 590-610nm

RN-PL-QD-OA-Kit10	5 x 10 mg
RN-PL-QD-OA-Kit25	5 x 25 mg
RN-PL-QD-OA-Kit100	5 x 100 mg

Hydrophilic ZnO Quantum Dots Kit

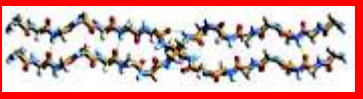
One kit of three types of ZnO quantum dots: 25 mg, 50 mg or 100 mg of each type

λ_{em} : 500 ± 20 nm
λ_{em} : 540 ± 20 nm
λ_{em} : 580 ± 20 nm

RN-PL-QD-ZnO-Kit25	5 x 25 mg
RN-PL-QD-ZnO-Kit50	5 x 50 mg
RN-PL-QD-ZnO-Kit100	5 x 100 mg

Tectomers

Tectomers are a novel type of self-assembling molecules. The structure of a tectomer represents several oligoglycine units linked to one common center. The pH dependent formation of strong hydrogen bonds between molecules leads to their selfassembly into extra-regular 2-D or 3-D layers of monomolecular thickness.10 mg of any tectomer is enough for coating of more than 2 m̈ of surface.



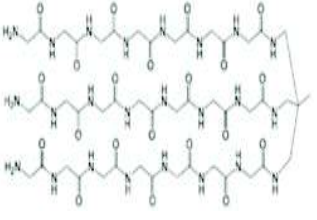
Tectomer 2-tailed, $C_8H_{16}(-CH_2NH\text{-}Gly)_5 * 2$ HCl

Purity: > 95%

RN-PL-TEC-2-10mg	10 mg
RN-PL-TEC-2-25mg	25 mg

Tectomer 3-tailed, $CH_3C(-CH_2NH\text{-}Gly)_7 * 3$ TFA

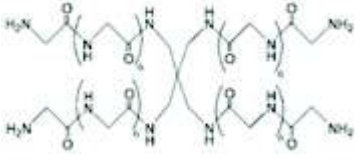
Purity: > 95%



RN-PL-TEC-3-10mg	10 mg
RN-PL-TEC-3-25mg	25 mg

Tectomer 4-tailed, $C(-CH_2NH\text{-}Gly)_7 * 4$ HCl

Purity: > 95%



RN-PL-TEC-4-10mg	10 mg
RN-PL-TEC-4-25mg	25 mg

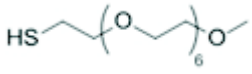
PEG Derivatives

PEG oligomers are processed into a variety of derivatives. A high purity for intermediates and products is maintained, and our catalogue items have an overall purity exceeding 95%. In comparison to PEG products obtained from polydisperse material, the use of our compounds is therefore more consistent.

mPEG Thiol

Purity: > 95%

Colorless liquid

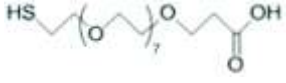


RN-PL-PEG-T-250mg	250 mg
RN-PL-PEG-T-500mg	500 mg

mPEG Thiol Acid

Purity: > 95%

Oily liquid

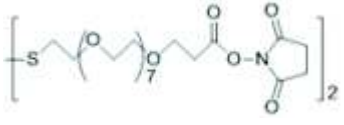


RN-PL-PEG-TA-250mg	250 mg
RN-PL-PEG-TA-500mg	500 mg

PEG NHS Ester Disulfide

Purity: > 95%

Oily liquid



RN-PL-PEG-NHS-250mg	250 mg
RN-PL-PEG-NHS-500mg	500 mg

Biotin PEG Disulfide

Purity: > 95%

Powder

RN-PL-PEG-BDS-10mg	10mg
RN-PL-PEG-BDS-50mg	50 mg

Phosphonic Acids Derivatives

Alkylphosphonic acids are widely used for production of nanoparticles such as quantum dots, nano-metals, nano-ceramics. By varying the carbohydral chain length one can change the particles' shape and size. Besides, they can be used for coating of many materials (including nanoparticles) by condensed hydrophobic monolayers.

n-Alkylphosphonic acids kit

One kit of all seven n-Alkylphosphonic acids, 5 g. each:

1 x RN - PL - HPA-5g

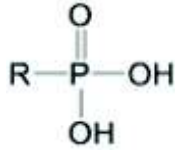
1 x RN - PL - OPA-5g

1 x RN - PL - DPA-5g

1 x RN - PL - DDPA-5g

1 x RN - PL - TDPA-5g1 x PL-HDPA-5g

1 x RN - PL - ODPA-5g



RN-PL-PA-Kit1	kit

n-Hexylphosphonic acid, tech.

$C_6H_{13}P(O)(OH)_2$

Purity: > 97% MP 105-106°C, White to off-white powder

RN-PL-HPA-1g	1 g
RN-PL-HPA-5g	5 g
RN-PL-HPA-10g	10 g
RN-PL-HPA-50g	50 g

n-Octylphosphonic acid, tech.

$C_8H_{17}P(O)(OH)_2$

Purity: >97% MP 102-103°C, White to off-white powder

RN-PL-OPA-1g	1 g
RN-PL-OPA-5g	5 g
RN-PL-OPA-10g	10 g
RN-PL-OPA-50g	50 g

n-Decylphosphonic acid, tech.

$C_{10}H_{21}P(O)(OH)_2$

Purity: > 97% MP 103-104°C White to off-white powder

RN-PL-DPA-1g	1 g
RN-PL-DPA-5g	5 g
RN-PL-DPA-10g	10 g
RN-PL-DPA-50g	50 g

n-Dodecylphosphonic acid, tech.

$C_{12}H_{25}P(O)(OH)_2$

Purity: > 97% MP 96-98°C

White to off-white powder

RN-PL-DDPA-1g	1 g
RN-PL-DDPA-5g	5 g
RN-PL-DDPA-10g	10 g
RN-PL-DDPA-50g	50 g

n-Tetradecylphosphonic acid, tech.

$C_{14}H_{29}P(O)(OH)_2$

Purity: > 97% MP 96-98°C

White to off-white powder

RN-PL-TDPA-1g	1 g
RN-PL-TDPA-5g	5 g
RN-PL-TDPA-10g	10 g
RN-PL-TDPA-50g	50 g

n-Hexadecylphosphonic acid, tech.

$C_{16}H_{33}P(O)(OH)_2$

Purity: > 97% MP 96-99°C

White to off-white powder

RN-PL-HDPA-1g	1 g
RN-PL-HDPA-5g	5 g
RN-PL-HDPA-10g	10 g
RN-PL-HDPA-50g	50 g

n-Octadecylphosphonic acid, tech.

$C_{18}H_{37}P(O)(OH)_2$

Purity: > 97% MP 100-101°C White to off-white powder

RN-PL-ODPA-1g	1 g
RN-PL-ODPA-5g	5 g
RN-PL-ODPA-10g	10 g
RN-PL-ODPA-50g	50 g

Benzylphosphonic acid, tech.

$C_6H_5CH_2P(O)(OH)_2$ Purity: > 97%

White to off-white powder

RN-PL-BZPA-1g	1 g
RN-PL-BZPA-5g	5 g
RN-PL-BZPA-10g	10 g
RN-PL-BZPA-50g	50 g

Benzhydrylphosphonic acid, tech.

$(C_6H_5)_2CH-P(O)(OH)_2$ Purity: > 97%

White to off-white powder

RN-PL-BHPA-1g	1 g
RN-PL-BHPA-5g	5 g
RN-PL-BHPA-10g	10 g
RN-PL-BHPA-50g	50 g

Metal-Organic Frameworks (MOFs)

MOFs are crystalline compounds consisting of metal ions coordinated to organic molecu-les to form porous three-dimensional structures. Possible applications include storage of gases such as H2and CO2, gas purification / separation, in catalysis and as sensors.

ZIF-8, 2-Methylimidazole zinc salt

New

Specifi c surface: 1300-1800 m2/g
Bulk density: ca. 0,3-0,4 g/cm3; Loss on drying: <2%
Can be activated at 100°C (vacuum)
Empirical Formula C8H12N4Zn
Molecular weight: 229.6

RN-PL-MOF-ZIF8-1g	1 g
RN-PL-MOF-ZIF8-10g	10 g
RN-PL-MOF-ZIF8-100g	100 g

HKUST-1, copper(II)-benzene-1,3,5-tricarboxylate

square-shaped pores of 9 A
Specific surface: ca. 1500 m2g; Mw: 604.9

RN-PL-MOF-HKUST1g	1 g
RN-PL-MOF-HKUST10g	10 g
RN-PL-MOF-HKUST1-100g	100 g

ZIF-8, 2-methylimidazole cobalt salt

Specific surface: ca. 1500 m2g; Mw: 221.1

RN-PL-MOF-ZIF67-1g	1 g
RN-PL-MOF-ZIF67-10g	10 g
RN-PL-MOF-ZIF67-100g	100 g

ALF, aluminium fumarate

Specific surface: ca. 1000 m2g; Mw: 158

RN-PL-MOF-ALF-1g	1 g
RN-PL-MOF-ALF-10g	10 g
RN-PL-MOF-ALF-100g	100 g

MAF, magnesium formate

Specific surface: ca. 500 m2g; Mw: 342.9

RN-PL-MOF-MAF-1g	1 g
RN-PL-MOF-MAF-10g	10 g
RN-PL-MOF-MAF-100g	100 g

SALT NANO- & MICROPARTICLES

Barium Titanate Nanopowder

Primary Particle Average size: 40-80 nm)

RN-PL-BT-A-1g	1 g
RN-PL-BT-A-5g	5 g

Barium Titanate Nanopowder

Iron Iodate, non linear optics nanocrystals
(Primary Particle Average size: 40-80 nm)
Particle Shape: Spherical to elongated
Second harmonic generation nanoparticles for non-linear optics

RN-PL-BT-A-1g	1 g
RN-PL-BT-A-5g	5 g

RN-PL-FeIO80-1g	1 g
RN-PL-FeIO80-10g	10 g

Graphenes on transparent mica and other substrates

Graphene is an allotrope of carbon, whose structure is a one-atom-thick planar sheet of sp^2-bonded carbon atoms that are densely packed in a honeycomb crystal lattice. The C-C bond length in graphene is about 0.142 nm. Graphene differs from most conventional three-dimensional materials. Intrinsic graphene is a semi-metal or zero-gap semiconductor. Experimental results from transport measurements show that graphene has a remarkably high electron mobility at room temperature, with reported values in excess of 15,000 $cm^2V^{-1}s^{-1}$. Graphene's unique electronic properties lead to an unexpectedly high opacity for an atomic monolayer: it absorbs $\pi\alpha \approx 2.3\%$ of white light (where α is the fine-structure constant).
Graphenes on atomically flat substrates (e.g. on mica) can be accurately characterized and employed for various promissing experiments.

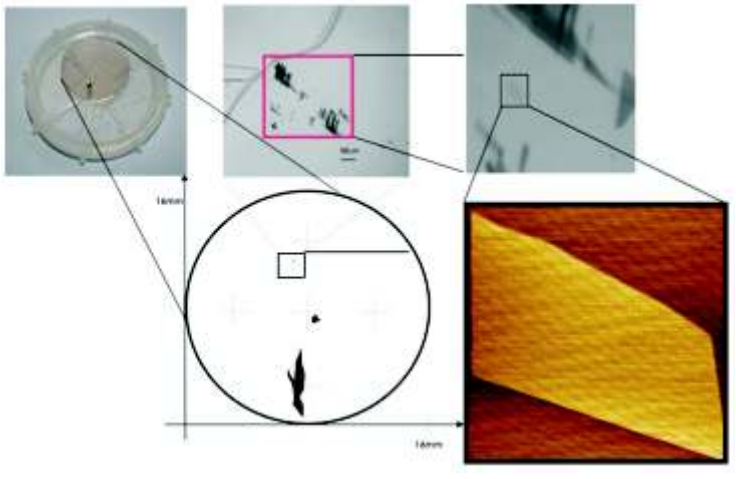
Graphene - nanoplatelets, dry

Thickness: 1-4 nm
Particles size: up to 2 µm
Specifi c surface area: 700-800 m²/g
Purity: 91 at.%. Other elements: O < 7 at.%; N < 2 at.%

RN-PL-P-G750-1g	1 g
RN-PL-P-G750-10g	10 g
RN-PL-P-G750-50g	50 g

Reinste Nano Ventures offers graphenes on different substrates like mica (which is a default material), silicon, glass, quartz etc. We can also place a graphene sheet onto a precoa- ted substrate. The form, size and shape of the substrate can be easily adopted to fit your needs.
A standard sample represents a mica disk of ca. 1 cm in diameter with mono-, bi- and fewlayer graphene(s) in the range from 20 µm² to several thousand µm² on its surface; the disk is mouted in a plastic holder. The sample is optically transparent and can be observed both in reflected and transmitted light. Each sample is accompanied with a set of images which will help to easily locate the graphene sheet on a substrate.

RN - PL - Graphene	Prices and detailed information for the graphenes see at www.www.reinste.com



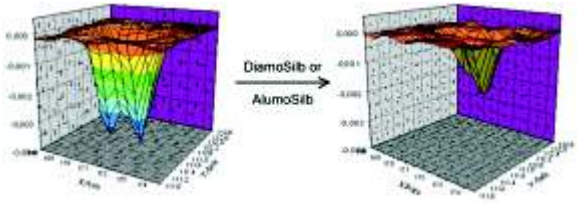
Additives for electroplating and electroless plating baths

DiamoSilb® , AlumoSilb®, DiamoChrom™, DiamoHard-N™, DiamoGold™

New word in metal plating. Friction and wear of galvanic metal coatings can be significantly reduced by using of our nanoparticles-based electrolyte additives.

Contact us for directions for use.

Considerable reduction of Wear and Friction coefficient by 50%



RN-PL-DiAg-1L	DiamoSilb, additive for silver plating, 1 L
RN-PL-AlAg-1L	AlumoSilb, additive for silver plating, 1 L
RN-PL-DiCr-1L	DiamoChrom, additive for chromium plating 1 L
RN-PL-DiAu-1L	DiamoGold, additive for gold plating, 1 L
RN-PL-DiHard-1L	DiamoHard-N, additive for nickel plating, 1 L

Additives for motor oils

ADDO®: novel additive for engine oils:
ADDO is based on a mixture of Diamonds and Graphite nanoparticles. Very fine particles of NanoDiamond, with size of only 6 nm polish the moving parts of an engine to mirror quality, leaving no defects and reducing friction and wear.
NanoGraphite is working as a natural and an extremely efficient dry lubricant reducing the friction further (see also www.addo-oil.com)

Your engine becomes more efficient, it uses less fuel and lives longer.

RN-PL-ADDO-200mL	200 mL (for 3-6 L oil)
RN-PL-ADDO-1L	5 x 200 mL (for 15-30 L oil)
RN-PL-ADDO-50L	50 L

DIAMOPOL: Super-Finish Polishing Paste

The current state-of-the-art technologies of super-finish polishing allow to achieve the roughness of ca. 2 nm. The use of our polishers based on nanoparticles allows to reduce the roughness by a factor of 2 and reach the value of 0.9 nm. These polishers can be supplied in hydrophilic, hydrophobic and all-purpose forms.

RN-PL-DiaPol-10m	10 mL
RN-PL-DiaPol-100m	100 mL

Nano Silver based Industrial Use Products

Reinste Nano Ventures Pvt. Ltd. provides you Liquid Nano Silver technology and unique Nano Silver intermediaries which converts all kind of Detergents, Ceramics, Plastics and Textiles into effective Antimicrobial , Antibacterial, Anti Viral and Anti Fungal properties enhanced products.

1. Liquid Nano Silver: Aqueous dispersion of colloidal silver

Potential applications of Liquid Nano Silver products range from varnishes and coatings over thermoplastic, thermosetting and elastomeric polymers to textile fibers. Liquid Nano Silver is therefore utilized as in antimicrobial additive for many chemical formulations like detergents, dyes, cleaners and cosmetics.

This Liquid Nano Silver is having the particle size of 15 nm and is totally miscible in water. It can be used as an additive to any water based coatings.

Liquid silver which is available in W10 (i.e. 100,000 ppm nano silver solution in water), W25 (i.e. 250,000 ppm nano silver solution in water) or W50 (i.e. 500,000 ppm nano silver solution in water).

2. Nano Silver Master Batches

- *Nano Silver PP-Master Batch*

  Nano silver master batch is developed for antimicrobial equipment of Thermoplastics, specially for the equipment of fibres which are produced by melting, mono as well as multifilament fibres. It is Lightest of all Chemical Fibres, used in carpets, artificial turfs and ropes.

  Chemical Character: PP resin in form of pellets containing Nano Silver.
  Silver Content- 5000 ppm
  Approx Particle Size of Silver < 30 nm
  Standard Packages- Air tight bags with a content of 25 kg

- *Nano Silver PET Master Batch*

  Nano silver master batch is developed for antimicrobial equipment of Thermoplastics, in special for the equipment of fibres which are produced by melting, mono as well as multifilament fibres. Bacteria prefer to keep in a moist environment in which they can reproduce the best. This environment can be found frequently in the bathroom, kitchen or bedroom and these nano silver products will help to clean them.

  Ideal application areas for your antibacterial tissues are therefore:
  - Linen. Mattress Covers
  - Washing and dish towels. Towels and washcloths
  - Knitted wear, functional wear
  - Workwear

  Chemical Character- PP resin with Nano Silver
  Silver Content- 10,000 ppm
  Approx Particle Size of Silver < 30 nm
  Standard Packages- Air tight bags with a content of 25 kg

- **Nano Silver Polyamide 6 (PA 6) Master Batch**

  Antimicrobial finishing of staple fibres from polyamide 6 by melt spinning. Nylon (PA 6, 6), Perlon (PA 6): The character of many PA-fibres makes them predestinated for the fabrication of clothing. They are easily dyed, lighter than silk, elastic, mothproof, stable against rottening and alkali substances and they are as well crease-resistant and tear proof. Nylon stockings are the prime example for the usage of polyamide. Natural polyamides are peptides and proteins like hair, wool and silk.

  Chemical Character/Composition: Polyamide 6 pellets containing Nano Silver

- **Nano Silver Polyethylene PE Master Batch**

  Polyethylene is probably the most produced plastic material. Plastic bags, buckets, plastic films, baskets, and many other items are typically made of PE.

Material	Minimum order amount	Description
Si MB PA/ 6.5	25 kg	PA Nano-Silver master batch, content 6.500 ppm = 0.65 %
Si MB PA6/ 6.5	25 kg	PA6 Nano-Silver master batch, content 6.500 ppm = 0.65 %
Si MB PP 6.5	25 kg	PP Nano-Silver master batch, content 6.500 ppm = 0.65 %
Si MB PTT 6.5	25kg	PTT Nano-Silver master batch, content 6.500 ppm = 0.65 %
Si MB ABS 6.5	25kg	ABS Nano-Silver master batch, content 6.500 ppm = 0.65 %
Si MB PBT/ 6.5	25kg	PBT Nano-Silver master batch, content 6.500 ppm = 0.65 %

3**. Nano Silver Yarn**

These are Nano Silver embedded Fibre yarn which can be mixed with normal yarns for making Antimicrobial textiles.

Material	Minimum order amount	Description
Si PET fil. fiber 200	1 ton	PET multi filament fibers, various Dtex e.g 80D/100F, (POY, DTY, FOY)
Si PET/PA fil. Fiber 200	1 ton	PET/PA conpund 70/30 multi filament fibers, various Dtex, 200 ppm for fabrics and knitware
Si PET/COT Yarn 200	1 ton	PET/COT blended Yarn Nm 50/2 (=200(2)Dtex), 200 ppm for fabrics and knitware

ULTRAPURE IONIC LIQUIDS

Product Name	Chemical formulae	CAS No.	Catalog No.
1-Ethyl-3-methylimidazolium bis (trifluoromethylsulfonyl)imide	$C_8H_{11}F_6N_3O_4S_2$	174899-82-2	RN-I-IL-0023-UP
1-Methyl-3-propylimidazolium bis(trifluoromethylsulfonyl)imide	$C_9H_{13}F_6N_3O_4S_2$	216299-72-8	RN-I-IL-0024-UP
1-Butyl-1-methylpyrrolidinium bis(trifluoromethylsulfonyl)imide	$C_{11}H_{20}F_6N_2O_4S_2$	223437-11-4	RN-I-IL-0035-UP
1-Methyl-1-propylpyrrolidinium bis(trifluoromethylsulfonyl)imide	$C_{10}H_{18}F_6N_2O_4S_2$	223437-05-6	RN-I-IL-0044-UP

IMIDAZOLIUM-BASED IONIC LIQUIDS

1-Butyl-3-methylimidazolium, acetate	$C_{10}H_{18}N_2O_2$	284049-75-8	RN-I-IL-0315-HP
1-Methyl-3-pentylimidazolium bis(trifluoromethylsulfonyl)imide	$C_{11}H_{17}F_6N_3O_4S_2$	280779-53-5,	RN-I-IL-0300-HP
1-Heptyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide	$C_{13}H_{21}F_6N_3O_4S_2$	425382-14-5	RN-I-IL-0301-HP
1-Methyl-3-nonylimidazolium bis(trifluoromethylsulfonyl)imide	$C_{15}H_{25}F_6N_3O_4S_2$	433337-21-4	RN-I-IL-0301-HP
1-Methyl-3-pentylimidazolium hexafluorophosphate	$C_9H_{17}F_6N_2P$	280779-52-4	RN-I-IL-0306-HP
1-Heptyl-3-methylimidazolium hexafluorophosphate	$C_{11}H_{21}F_6N_2P$	357915-04-9	RN-I-IL-0307-HP
1-Methyl-3-nonylimidazolium hexafluorophosphate	$C_{13}H_{25}F_6N_2P$	343952-29-4	RN-I-IL-0308-HP
1-Methyl-3-pentylimidazolium tetrafluoroborate	$C_9H_{17}BF_4N_2$	244193-49-5	RN-I-IL-0303-HP
1-Heptyl-3-methylimidazolium tetrafluoroborate	$C_{11}H_{21}BF_4N_2$	244193-51-9	RN-I-IL-0304-HP
1-Methyl-3-nonylimidazolium tetrafluoroborate	$C_{13}H_{25}BF_4N_2$	244193-55-3	RN-I-IL-0305-HP
1-Methyl-3-pentylimidazolium bromide	$C_9H_{17}BrN_2$	343851-31-0	RN-I-IL-0297-HP
1-Heptyl-3-methylimidazolium bromide	$C_{11}H_{21}BrN_2$	343851-32-1	RN-I-IL-0298-HP

Product Name	Chemical formulae	CAS No.	Catalog No.
1-Methyl-3-nonylimidazolium bromide	$C_{13}H_{25}BrN_2$	343851-34-3	RN-I-IL-0299-HP
Bis(1-ethyl-3-methylimidazolium) tetrathiocyanatocobaltate	$C_{16}H_{22}CoN_8S_4$	1255925-80-4	RN-I-IL-0309-HP
Bis(1-butyl-3-methylimidazolium) tetrathiocyanatocobaltate	$C_{20}H_{30}CoN_8S_4$	1245942-47-5	RN-I-IL-0310-HP
IMIDAZOLIUM- AND PYRIDINIUM-BASED PERFLUOROBUTANESULFONATES			
1-Hexyl-3-methylimidazolium perfluorobutanesulfonate	$C_{14}H_{19}F_9N_2O_3S$	1001557-05-6	RN-I-IL-0311-HP
1-Methyl-3-octylimidazolium perfluorobutanesulfonate	$C_{16}H_{23}F_9N_2O_3S$	905972-83-0	RN-I-IL-0312-HP
1-Ethyl-3-methylpyridinium perfluorobutanesulfonate	$C_{12}H_{12}F_9NO_3S$	1015420-87-7	RN-I-IL-0313-HP
DABCO-BASED IONIC LIQUIDS			
1-Hexyl-1,4-diaza[2.2.2]bicyclooctanium bis(trifluoromethylsulfonyl)imide	$C_{14}H_{25}F_6N_3O_4S_2$	898256-50-3	RN-I-IL-0314-HP
PYRIDINIUM-BASED BROMIDES			
1- Ethyl-2-methylpyridinium bromide	$C_8H_{12}BrN$	32353-50-7	RN-I-IL-0225-HP
1- Ethyl-3-methylpyridinium bromide	$C_8H_{12}BrN$	54778-76-6	RN-I-IL-0226-HP
1-Ethyl-4-methylpyridinium bromide	$C_8H_{12}BrN$	32353-49-4	RN-I-IL-0227-HP
1-Propyl-2-methylpyridinium bromide	$C_9H_{14}BrN$	5411-09-6	RN-I-IL-0221-HP
1-Propyl-3-methylpyridinium bromide	$C_9H_{14}BrN$	67021-55-0	RN-I-IL-0222-HP
1-Propyl-4-methylpyridinium bromide	$C_9H_{14}BrN$	70850-58-7	RN-I-IL-0223-HP

AMMONIUM-BASED IONIC LIQUIDS

Product Name	Chemical formulae	CAS No.	Catalog No.
Butyltrimethylammoniumbis (trifluoromethylsulfonyl)imide	$C_9H_{18}F_6NO_4S_2$	258273-75-5	RN-I-IL-0032-HP
Choline bis (trifluoromethylsulfonyl)imide	$C_7H_{14}F_6NO_4S_2$	827027-25-8	RN-I-IL-0110-HP
Choline dihydrogen phosphate	$C_5H_{16}NPO_5$	83846-92-8	RN-I-IL-0042-HP
Dimethylammonium nitrate	$C_2H_8N_2O_3$	30781-73-8	RN-I-IL-0126-SG
Ethylammoniumnitrate	$C_2H_8N_2O_3$	22113-86-6	RN-I-IL-0043-SG
2-Hydroxyethylammonium formate	$C_3H_9NO_3$	53226-35-0	RN-I-IL-0034-SG
Methylammoniumnitrate	$CH_6N_2O_3$	22113-87-7	RN-I-IL-0124-SG
Methyltrioctylammonium bis(trifluoromethylsulfonyl)imide	$C_{27}H_{54}F_6NO_4S_2$	375395-33-8	RN-I-IL-0017-HP
Methyltrioctylammonium trifluoromethanesulfonate	$C_{26}H_{54}F_3NO_3S$	121107-18-4	RN-I-IL-0118-HP
Propylammoniumnitrate	$C_3H_{10}N_2O_3$	22113-88-8	RN-I-IL-0125-SG
Tributylmethylammonium bis(trifluoromethylsulfonyl)imide	$C_{15}H_{30}F_6NO_4S_2$	405514-94-5	RN-I-IL-0117-HP
Butyltrimethylammonium methylcarbonate	$C_9H_{21}NO_3$		RN-I-IN-0032-SG
Methyltrioctylammonium methylcarbonate	$C_{27}H_{57}NO_3$	488711-07-5	RN-I-IN-0033-SG
N-Ethyl-N-methylmorpholinium methylcarbonate	$C_9H_{19}NO_4$		RN-I-IN-0034-SG
N,N-Diethyl-N-methyl-N-(2-methoxyethyl) ammonium tetrafluoroborate	$C_8H_{20}BF_4NO$	464927-72-8	RN-I-IL-0123-HP
N,N-Diethyl-N-methyl-N-(2-methoxyethyl) ammonium bis(trifluoromethylsulfonyl)-imide	$C_{10}H_{20}F_6NO_5S_2$	464927-84-2	RN-I-IL-0116-HP
Tetraethylammonium 1,1,2,2-tetrafluoroethanesulfonate	$C_{10}H_{21}F_4NO_3S$		RN-I-IL-0238-SG
Butyltrimethylammonium 1,1,2,2-tetrafluoroethanesulfonate	$C_9H_{19}F_4NO_3S$		RN-I-IL-0237-HP

Product Name	Chemical formulae	CAS No.	Catalog No.
Quarternary Amines from Evonik Goldschmidt GmbH			
IoLiLyteÒ C1EG			RN-I-IN-0022-TG
IoLiLyteÒ T2EG			RN-I-IN-0023-TG
IoLiLyteÒ 221PG			RN-I-IN-0024-TG
IoLiLyteÒ 12IM	$C_8H_{16}NO_2S_4$	342573-75-5	RN-I-IN-0026-HP
IMIDAZOLIUM-BASED BIS(TRIFLUOROMETHYLSULFONYL)IMIDES			
1- Methylimidazolium bis(trifluoromethylsulfonyl)imide	$C_6H_7F_6N_3O_4S_2$	353239-08-4	RN-I-IL-0261-SG
1,3-Dimethylimidazolium bis(trifluoromethylsulfonyl)imide	$C_7H_9F_6N_3O_4S_2$	174899-81-1	RN-I-IL-0198-HP
1- Ethylimidazolium bis(trifluoromethylsulfonyl)imide	$C_7H_9F_6N_3O_4S_2$	353239-10-8	RN-I-IL-0269-SG
1-Ethyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide	$C_8H_{11}F_6N_3O_4S_2$	174899-82-2	RN-I-IL-0023-HP
1,2-Dimethylimidazolium bis(trifluoromethylsulfonyl)imide	$C_7H_9F_6N_3O_4S_2$	353239-12-0	RN-I-IL-0278-SG
1- Ethyl-2,3-dimethylimidazolium bis(trifluoromethylsulfonyl)imide	$C_9H_{13}F_6N_3O_4S_2$	174899-90-2	RN-I-IL-0106-HP
1- Methyl-3-propylimidazolium bis(trifluoromethylsulfonyl)imide	$C_9H_{13}F_6N_3O_4S_2$	216299-72-8	RN-I-IL-0024-HP
1,2-Dimethyl-3-propylimidazolium bis(trifluoromethylsulfonyl)imide	$C_{10}H_{15}F_6N_3O_4S_2$	169051-76-7	RN-I-IL-0134-HP
1-Allyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide	$C_9H_{11}F_6N_3O_4S_2$	655249-87-9	RN-I-IL-0239-HP
1-Butyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide	$C_{10}H_{15}F_6N_3O_4S_2$	174899-83-3	RN-I-IL-0029-HP
1-Butyl-2,3-dimethylimidazolium bis(trifluoromethylsulfonyl)imide	$C_{11}H_{17}F_6N_3O_4S_2$	350493-08-2	RN-I-IL-0104-HP

Product Name	Chemical formulae	CAS No.	Catalog No.
1-Hexyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide	$C_{12}H_{19}F_6N_3O_4S_2$	382150-50-7	RN-I-IL-0098-HP
1-Methyl-3-octylimidazolium bis(trifluoromethylsulfonyl)imide	$C_{14}H_{23}F_6N_3O_4S_2$	178631-04-4	RN-I-IL-0099-HP
1-Decyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide	$C_{16}H_{27}F_6N_3O_4S_2$	433337-23-6	RN-I-IL-0100-HP
1-Dodecyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide	$C_{18}H_{31}F_6N_3O_4S_2$	404001-48-5	RN-I-IL-0101-HP
1-Methyl-3-tetradecylimidazolium bis(trifluoromethylsulfonyl)imide	$C_{20}H_{35}F_6N_3O_4S_2$	404001-49-6	RN-I-IL-0102-HP
1-Hexadecyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide	$C_{22}H_{39}F_6N_3O_4S_2$	404001-50-9	RN-I-IL-0103-HP
1-Methyl-3-octadecylimidazolium bis(trifluoromethylsulfonyl)imide	$C_{24}H_{43}F_6N_3O_4S_2$	404001-51-0	RN-I-IL-0200-HP
1-Benzyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide	$C_{13}H_{13}F_6N_3O_4S_2$	433337-24-7	RN-I-IL-0241-HP
1,3-Diethylimidazolium bis(trifluoromethylsulfonyl)imide	$C_9H_{13}F_6N_3O_4S_2$	174899-88-8	RN-I-IL-0188-HP
1-Ethyl-3-propylimidazolium bis(trifluoromethylsulfonyl)imide	$C_{10}H_{15}F_6N_3O_4S_2$	347882-21-7	RN-I-IL-0285- HP
1-Butyl-3-ethylimidazolium bis(trifluoromethylsulfonyl)imide	$C_{11}H_{17}F_6N_3O_4S_2$	174899-89-9	RN-I-IL-0289- HP
1-Ethyl-3-vinylimidazolium bis(trifluoromethylsulfonyl)imide	$C_9H_{11}F_6N_3O_4S_2$	204854-22-8	RN-I-IL-0291- HP
1-Butyl-3-vinylimidazolium bis(trifluoromethylsulfonyl)imide	$C_{11}H_{15}F_6N_3O_4S_2$	758716-72-2	RN-I-IL-0293- HP
IMIDAZOLIUM-BASED TRIFLATES			
1-Methylimidazolium trifluoromethanesulfonate	$C_4H_7F_3N_2O_3S$	99257-94-0	RN-I-IL-0263-SG
1-Ethylimidazolium trifluoromethanesulfonate	$C_6H_9F_3N_2O_3S$	501693-46-5	RN-I-IL-0271-SG
1-Ethyl-3-methylimidazolium trifluoromethanesulfonate	$C_7H_{11}F_3N_2O_3S$	145022-44-2	RN-I-IL-0009-HP

Product Name	Chemical formulae	CAS No.	Catalog No.
1-Ethyl-2,3-dimethylimidazolium trifluoromethanesulfonate	$C_8H_{13}F_3N_2O_3S$	174899-72-0	RN-I-IL-0002-HP
1-Methyl-3-propylimidazolium trifluoromethanesulfonate	$C_8H_{13}F_3N_2O_3S$		RN-I-IL-0296-HP
1-Butyl-3-methylimidazolium trifluoromethanesulfonate	$C_9H_{15}F_3N_2O_3S$	174899-66-2	RN-I-IL-0013-HP
1-Butyl-2,3-dimethylimidazolium trifluoromethanesulfonate	$C_{10}H_{17}F_3N_2O_3S$	765910-73-4	RN-I-IL-0059-HP
1-Hexyl-3-methylimidazolium trifluoromethanesulfonate	$C_{11}H_{19}F_3N_2O_3S$	460345-16-8	RN-I-IL-0070-HP
1-Methyl-3-octylimidazolium trifluoromethanesulfonate	$C_{13}H_{23}F_3N_2O_3S$	403842-84-2	RN-I-IL-0073-HP
1-Decyl-3-methylimidazolium trifluoromethanesulfonate	$C_{15}H_{27}F_3N_2O_3S$	412009-62-2	RN-I-IL-0068-HP
1-Dodecyl-3-methylimidazolium trifluoromethanesulfonate	$C_{17}H_{31}F_3N_2O_3S$	404001-52-1	RN-I-IL-0133-HP
IMIDAZOLIUM-BASED 1,1,2,2-TETRAFLUOROETHANESULFONATES			
1-Methylimidazolium 1,1,2,2-tetrafluoroethanesulfonate	$C_6H_8F_4N_2O_3S$		RN-I-IL-0262-SG
1-Ethylimidazolium 1,1,2,2-tetrafluoroethanesulfonate	$C_7H_{10}F_4N_2O_3S$		RN-I-IL-0270-SG
1-Ethyl-3-methylimidazolium 1,1,2,2-tetrafluoroethanesulfonate	$C_8H_{12}F_4N_2O_3S$	880084-63-9	RN-I-IL-0232-HP
1-Ethyl-3-methylimidazolium 1,1,2,2-tetrafluoroethanesulfonate	$C_8H_{12}F_4N_2O_3S$	880084-63-9	RN-I-IL-0232-SG
1-Methyl-3-propylimidazolium 1,1,2,2-tetrafluoroethanesulfonate	$C_9H_{14}F_4N_2O_3S$		RN-I-IL-0233-HP
1-Methyl-3-propylimidazolium 1,1,2,2-tetrafluoroethanesulfonate	$C_9H_{14}F_4N_2O_3S$		RN-I-IL-0233-SG
1-Butyl-3-methylimidazolium 1,1,2,2-tetrafluoroethanesulfonate	$C_{10}H_{14}F_4N_2O_3S$	880084-62-8	RN-I-IL-0234-HP
1-Butyl-3-methylimidazolium 1,1,2,2-tetrafluoroethanesulfonate	$C_{10}H_{14}F_4N_2O_3S$	880084-62-8	RN-I-IL-0234-SG
1-Butyl-3-ethylimidazolium 1,1,2,2-tetrafluoroethanesulfonate	$C_{11}H_{18}F_4N_2O_3S$		RN-I-IL-0255-SG

Product Name	Chemical formulae	CAS No.	Catalog No.
1-Benzyl-3-methylimdiazolium 1,1,2,2-tetrafluoroethanesulfonate	$C_{13}H_{14}F_4N_2O_3S$		RN-I-IL-0254-SG
Hexafluorophosphonates			
1-Ethyl-3-methylimidazolium hexafluorophosphate	$C_6H_{11}F_6N_2P$	155371-19-0	RN-I-IL-0122-HP
1-Ethyl-2,3-dimethylimidazolium hexafluorophosphate	$C_7H_{13}F_6N_2P$	292140-86-4	RN-I-IL-0139-HP
1-Methyl-3-propylimidazolium hexafluorophosphate	$C_7H_{13}F_6N_2P$	216300-12-8	RN-I-IL-0142-HP
1-Butyl-3-methylimidazolium hexafluorophosphate	$C_8H_{15}F_6N_2P$	174501-64-5	RN-I-IL-0011-HP
1-Butyl-2,3-dimethylimidazolium hexafluorophosphate	$C_9H_{17}F_6N_2P$	227617-70-1	RN-I-IL-0057-HP
1-Hexyl-3-methylimidazolium hexafluorophosphate	$C_{10}H_{19}F_6N_2P$	304680-35-1	RN-I-IL-0018-HP
1-Methyl-3-octylimidazolium hexafluorophosphate	$C_{12}H_{23}F_6N_2P$	304680-36-2	RN-I-IL-0020-HP
1-Decyl-3-methylimidazolium hexafluorophosphate	$C_{14}H_{27}F_6N_2P$	362043-46-7	RN-I-IL-0066-HP
1-Dodecyl-3-methylimidazolium hexafluorophosphate	$C_{16}H_{31}F_6N_2P$	219947-93-0	RN-I-IL-0095-HP
1-Methyl-3-tetradecylimidazolium hexafluorophosphate	$C_{18}H_{35}F_6N_2P$	219947-94-1	RN-I-IL-0157-HP
1-Hexadecyl-3-methylimidazolium hexafluorophosphate	$C_{20}H_{39}F_6N_2P$	219947-95-2	RN-I-IL-0158-HP
1-Methyl-3-octadecylimidazolium hexafluorophosphate	$C_{22}H_{43}F_6N_2P$	219947-96-3	RN-I-IL-0159-HP
1-Benzyl-3-methylimidazolium hexafluorophosphate	$C_{11}H_{13}F_6N_2P$	433337-11-2	RN-I-IL-0187-HP
1,3-Diethylimidazolium hexafluorophosphate	$C_7H_{13}F_6N_2P$	370085-15-7	RN-I-IL-0281- HP
1-Ethyl-3-propylimidazolium hexafluorophosphate	$C_8H_{15}F_6N_2P$		RN-I-IL-0284- HP

Product Name	Chemical formulae	CAS No.	Catalog No.
1-Butyl-3-ethylimidazolium hexafluorophosphate	$C_9H_{17}F_6N_2P$	256647-89-9	RN-I-IL-0288- HP
IMIDAZOLIUM-BASED TETRAFLUOROBORATES			
1-Ethyl-3-methylimidazolium tetrafluoroborate	$C_6H_{11}BF_4N_2$	143314-16-3	RN-I-IL-0006-HP
1-Ethyl-2,3-dimethylimidazolium tetrafluoroborate	$C_7H_{13}BF_4N_2$	307492-75-7	RN-I-IL-0001-HP
1-(2-Hydroxyethyl)-3-methylimidazolium tetrafluoroborate	$C_6H_{11}BF_4N_2O$	374564-83-7	RN-I-IL-0038-HP
1-Methyl-3-propylimidazolium tetrafluoroborate	$C_7H_{13}BF_4N_2$	244193-48-4	RN-I-IL-0143-HP
1-Butyl-3-methylimidazolium tetrafluoroborate	$C_8H_{15}BF_4N_2$	174501-65-6	RN-I-IL-0012-HP
1-Butyl-3-methylimidazolium tetrafluoroborate	$C_8H_{15}BF_4N_2$	174501-65-6	RN-I-IL-0012-HP
1-Butyl-2,3-dimethylimidazolium tetrafluoroborate	$C_9H_{17}BF_4N_2$	402846-78-0	RN-I-IL-0058-HP
1-Hexyl-3-methylimidazolium tetrafluoroborate	$C_{10}H_{19}BF_4N_2$	244193-50-8	RN-I-IL-0019-HP
1-Methyl-3-octylimidazolium tetrafluoroborate	$C_{12}H_{23}BF_4N_2$	244193-52-0	RN-I-IL-0021-HP
1-Decyl-3-methylimidazolium tetrafluoroborate	$C_{14}H_{27}BF_4N_2$	244193-56-4	RN-I-IL-0067-HP
1-Dodecyl-3-methylimidazolium tetrafluoroborate	$C_{16}H_{31}BF_4N_2$	244193-59-7	RN-I-IL-0132-HP
1-Methyl-3-tetradecylimidazolium tetrafluoroborate	$C_{18}H_{35}BF_4N_2$	244193-61-1	RN-I-IL-0256-HP
1-Hexadecyl-3-methylimidazolium tetrafluoroborate	$C_{20}H_{39}BF_4N_2$	244193-64-4	RN-I-IL-0097-HP
1-Methyl-3-octadecylimidazolium tetrafluoroborate	$C_{22}H_{43}BF_4N_2$	244193-65-5	RN-I-IL-0210-HP
1-Benzyl-3-methylimidazolium tetrafluoroborate	$C_{11}H_{13}BF_4N_2$	500996-04-3	RN-I-IL-0193-HP
1,3-Diethylimidazolium tetrafluoroborate	$C_7H_{13}BF_4N_2$	847335-65-3	RN-I-IL-0280- HP

Product Name	Chemical formulae	CAS No.	Catalog No.
1-Ethyl-3-propylimidazolium tetrafluoroborate	$C_8H_{15}BF_4N_2$		RN-I-IL-0283-SG
1-Butyl-3-ethylimidazolium tetrafluoroborate	$C_9H_{17}BF_4N_2$	581101-91-9	RN-I-IL-0287- HP

IMIDAZOLIUM-BASED CHLORIDES

1-Methylimidazolium chloride	$C_4H_7ClN_2$	35487-17-3	RN-I-IL-0094-SG
1-Ethylimidazolium chloride	$C_5H_9ClN_2$	81505-35-3	RN-I-IL-0275-SG
1-Ethyl-3-methylimidazolium chloride	$C_6H_{11}ClN_2$	65039-09-0	RN-I-IL-0093-TG
1-Ethyl-3-methylimidazolium chloride	$C_6H_{11}ClN_2$	65039-09-0	RN-I-IL-0093-HP
1-Allyl-3-methylimidazolium chloride	$C_7H_{11}NCl$	65039-10-3	RN-I-IL-0022-HP
1-(2-Hydroxyethyl)-3-methylimidazolium chloride	$C_6H_{11}ClN_2O$	61755-34-8	RN-I-IL-0039-HP
1-Methyl-3-propylimidazolium chloride	$C_7H_{13}ClN_2$	79917-89-8	RN-I- IL-0144-HP
1-Butyl-3-methylimidazolium chloride	$C_8H_{15}ClN_2$	79917-90-1	RN-I-IL-0014-HP
1,2-Dimethylimidazolium chloride	$C_5H_9ClN_2$	34531-53-8	RN-I-IL-0277-SG
1-Butyl-2,3-dimethylimidazolium chloride	$C_9H_{17}ClN_2$	98892-75-2	RN-I-IL-0056-HP
1-Hexyl-3-methylimidazolium chloride	$C_{10}H_{19}ClN_2$	171058-17-6	RN-I-IL-0054-HP
1-Methyl-3-octylimidazolium chloride	$C_{12}H_{23}ClN_2$	64697-40-1	RN-I-IL-0072-HP
1-Decyl-3-methylimidazolium chloride	$C_{14}H_{27}ClN_2$	171058-18-7	RN-I-IL-0065-HP
1-Dodecyl-3-methylimidazolium chloride	$C_{16}H_{31}ClN_2$	114569-84-5	RN-I-IL-0120-HP
1-Methyl-3-tetradecylimidazolium chloride	$C_{18}H_{35}ClN_2$	171058-21-2	RN-I-IL-0141-HP
1-Hexadecyl-3-methylimidazolium chloride	$C_{20}H_{39}ClN_2$	546-01-8	RN-I-IL-0115-HP

Product Name	Chemical formulae	CAS No.	Catalog No.
1-Methyl-3-octadecylimidazolium chloride	$C_{22}H_{43}ClN_2$	171058-19-8	RN-I-IL-0160-HP
1,3-Didecyl-2-methylimidazolium chloride	$C_{24}H_{47}ClN_2$	70862-65-6	RN-I-IL-0046-HP
1-Benzyl-3-methylimidazolium chloride	$C_{11}H_{13}ClN_2$	36443-80-8	RN-I-IL-0140-HP
IMIDAZOLIUM-BASED BROMIDES			
1-Methylimidazolium bromide	$C_4H_7BrN_2$	101023-58-9	RN-I-IL-0267-SG
1-Ethylimidazolium bromide	$C_5H_9BrN_2$	501693-36-3	RN-I-IL-0276-SG
1-Ethyl-3-methylimidazolium bromide	$C_6H_{11}BrN_2$	65039-08-9	RN-I-IL-0015-HP
1-Ethyl-2,3-dimethylimidazolium bromide	$C_7H_{13}BrN_2$	98892-76-3	RN-I-IL-0135-HP
1-Methyl-3-propylimidazolium bromide	$C_7H_{13}BrN_2$	85100-76-1	RN-I-IL-0096-HP
1,2-Dimethyl-3-propylimidazolium bromide	$C_8H_{15}BrN_2$	107937-17-7	RN-I-IL-0229-HP
1-Butyl-3-methylimidazolium bromide	$C_8H_{15}BrN_2$	85100-77-2	RN-I-IL-0037-HP
1-Butyl-2,3-dimethylimidazolium bromide	$C_9H_{17}BrN_2$	475575-45-2	RN-I-IL-0055-HP
1-Hexyl-3-methylimidazolium bromide	$C_{10}H_{19}BrN_2$	85100-78-3	RN-I-IL-0069-HP
1-Methyl-3-octylimidazolium bromide	$C_{12}H_{23}BrN_2$	61545-99-1	RN-I-IL-0071-HP
1-Decyl-3-methylimidazolium bromide	$C_{14}H_{27}BrN_2$	188589-32-4	RN-I-IL-0064-HP
1-Dodecyl-3-methylimidazolium bromide	$C_{16}H_{31}BrN_2$	61546-00-7	RN-I-IL-0119-HP
1,3-Diethylimidazolium bromide	$C_7H_{13}BrN_2$	54304-66-4	RN-I-IL-0279- HP
1-Ethyl-3-propylimidazolium bromide	$C_8H_{15}BrN_2$	637348-59-5	RN-I-IL-0282- HP
1-Butyl-3-ethylimidazolium bromide	$C_9H_{17}BrN_2$	174899-64-0	RN-I-IL-0286- HP

Product Name	Chemical formulae	CAS No.	Catalog No.
1-Ethyl-3-vinylimidazolium bromide	$C_7H_{11}BrN_2$	34311-88-1	RN-I-IL-0290- HP
1-Butyl-3-vinylimidazolium bromide	$C_9H_{15}BrN_2$	34311-90-5	RN-I-IL-0292- HP
IMIDAZOLIUM-BASED IODIDES			
1,3-Dimethylimidazolium iodide	$C_5H_9IN_2$	4333-62-4	RN-I-IL-0199-HP
1-Ethyl-3-methylimidazolium iodide	$C_6H_{11}IN_2$	35935-34-3	RN-I-IL-0048-HP
1-Methyl-3-propylimidazolium iodide	$C_7H_{13}IN_2$	119171-18-5	RN-I-IL-0025-HP
1,2-Dimethyl-3-propylimidazolium iodide	$C_8H_{15}IN_2$	218151-78-1	RN-I-IL-0049-HP
1-Allyl-3-methylimidazolium iodide	$C_7H_{11}NI_2$	65039-07-8	RN-I-IL-0231-HP
1-Butyl-3-methylimidazolium iodide	$C_8H_{15}IN_2$	65039-05-6	RN-I-IL-0051-HP
1-Butyl-2,3-dimethylimidazolium iodide	$C_9H_{17}IN_2$	108203-70-9	RN-I-IL-0137-HP
1-Hexyl-3-methylimidazolium iodide	$C_{10}H_{19}IN_2$	178631-05-5	RN-I-IL-0026-HP
1-Hexyl-2,3-dimethylimidazolium iodide	$C_{11}H_{21}IN_2$	288627-94-1	RN-I-IL-0138-HP
1-Dodecyl-3-methylimidazolium iodide	$C_{16}H_{31}IN_2$	81995-09-7	RN-I-IL-0136-HP
IMIDAZOLIUM-BASED SULFATES, SULFONATES, PHOSPHATES			
1,3-Dimethylimidazolium methyl sulfate	$C_6H_{12}NO_4S$	97345-90-9	RN-I-IL-0243-HP
1-Ethyl-3-methylimidazolium methyl sulfate	$C_7H_{14}NO_4S$	516474-01-4	RN-I-IL-0112-HP
1-Ethyl-3-methylimidazolium ethyl sulfate	$C_8H_{16}NO_4S$	342573-75-5	RN-I-IL-0033-HP
1,3-Diethylimidazolium ethyl sulfate	$C_9H_{18}NO_4S$	516474-04-7	RN-I-IL-0244-HP
1,3-Dimethylimidazolium dimethyl phosphate	$C_7H_{15}NO_4P$	654058-04-5	RN-I-IL-0053-HP

Product Name	Chemical formulae	CAS No.	Catalog No.
1-Ethyl-3-methylimidazolium dimethyl phosphate	$C_9H_{19}N_2O_4P$	945611-27-8	RN-I-IL-0220-HP
1-Ethyl-3-methylimidazolium diethyl phosphate	$C_{10}H_{21}N_2O_4P$	663199-29-9	RN-I-IL-0052-HP
1,3-Diethylimidazolium diethyl phosphate	$C_{11}H_{23}N_2O_4P$	945406-32-6	RN-I-IL-0245-HP
1-Butyl-3-methylimidazolium dimethyl phosphate	$C_{10}H_{21}N_2O_4P$	891772-94-4	RN-I-IL-0257-HP
1-Ethyl-3-methylimidazolium hydrogen sulfate	$C_6H_{12}N_2O_4S$	412009-61-1	RN-I-IL-0091-HP
1-Butyl-3-methylimidazolium hydrogen sulfate	$C_8H_{16}N_2O_4S$	262297-13-2	RN-I-IL-0060-HP
1-Ethyl-3-methylimidazolium tosylate	$C_{13}H_{18}N_2O_3S$	328090-25-1	RN-I-IL-0008-HP
1-Ethyl-3-methylimidazolium methanesulfonate	$C_7H_{14}N_2O_3S$	145022-45-3	RN-I-IL-0004-HP
1-Butyl-3-methylimidazolium methanesulfonate	$C_9H_{18}N_2O_3S$	342789-81-5	RN-I-IL-0061-HP
IMIDAZOLIUM-BASED THIOCYANATES, DICYANAMIDES			
1-Ethyl-3-methylimidazolium thiocyanate	$C_7H_{11}N_3S$	331717-63-6	RN-I-IL-0007-HP
1-Butyl-3-methylimidazolium thiocyanate	$C_9H_{15}N_3S$	344790-87-0	RN-I-IL-0063-HP
1-Ethyl-3-methylimidazolium dicyanamide	$C_8H_{11}N_5$	370865-89-7	RN-I-IL-0003-HP
1-Butyl-3-methylimidazolium dicyanamide	$C_{10}H_{15}N_5$	448245-52-1	RN-I-IL-0010-HP
1-Allyl-3-methylimidazolium dicyanamide	$C_9H_{11}N_5$	917956-73-1	RN-I-IL-0240-HP
1-Benzyl-3-methylimidazolium dicyanamide	$C_{13}H_{13}N_5$	958445-60-8	RN-I-IL-0242-HP
IMIDAZOLIUM-BASED ACETATES, TRIFLUOROACETATES, NITRATES, TETRACHLOROFERRATES			
1-Ethyl-3-methylimidazolium acetate	$C_8H_{14}N_2O_2$	143314-17-4	RN-I-IL-0189-TG
1-Ethyl-3-methylimidazolium trifluoroacetate	$C_8H_{11}F_3N_2O_2$	174899-65-1	RN-I-IL-0027-SG

Product Name	Chemical formulae	CAS No.	Catalog No.
1-Butyl-3-methylimidazolium trifluoroacetate	$C_{10}H_{15}F_3N_2O_2$	174899-94-6	RN-I-IL-0260-SG
1-Methylimidazolium nitrate	$C_4H_7N_3O_3$		RN-I-IL-0264-SG
1-Ethylimidazolium nitrate	$C_5H_9N_3O_3$	501693-38-5	RN-I-IL-0272-SG
1-Ethyl-3-methylimidazolium nitrate	$C_6H_{11}N_3O_3$	143314-14-1	RN-I-IL-0005-HP
1-Butyl-3-methylimidazolium tetrachloroferrate(III)	$C_8H_{15}Cl_4FeN_2$	359845-21-9	RN-I-IL-0047-SG
IMIDAZOLIUM-BASED METHYLCARBONATES			
1-Ethyl-3-methylimidazolium methylcarbonate	C8H14N2O3	251102-26-7	RN-I-IN-0027-SG
1-Butyl-3-methylimidazolium methylcarbonate	C10H18N2O3	916850-37-8	RN-I-IN-0028-SG
PIPERIDINIUM-BASED IONIC LIQUIDS			
1-Butyl-1-methylpiperidinium bis(trifluoromethylsulfonyl)imide	$C_{12}H_{22}F_6N_2O_4S_2$	623580-02-9	RN-I-IL-0154-HP
1-Butyl-1-methylpiperidinium bromide	$C_{10}H_{22}BrN$	94280-72-5	RN-I-IL-0153-HP
1-Butyl-1-methylpiperidinium hexafluorophosphate	$C_{10}H_{22}F_6NP$		RN-I-IL-0156-HP
1-Butyl-1-methylpiperidinium iodide	$C_{10}H_{22}IN$	37971-78-1	RN-I-IL-0169-HP
1-Butyl-1-methylpiperidinium tetrafluoroborate	$C_{10}H_{22}BF_4N$	886439-34-5	RN-I-IL-0152-HP
1-Butyl-1-methylpiperidinium trifluoromethanesulfonate	$C_{11}H_{22}F_3NO_3S$		RN-I-IL-0174-HP
1-Methyl-1-propylpiperidinium bis(trifluoromethylsulfonyl)imide	$C_{11}H_{20}F_6N_2O_4S_2$	608140-12-1	RN-I-IL-0045-HP
1-Methyl-1-propylpiperidinium bromide	$C_9H_{20}BrN$	88840-42-0	RN-I-IL-0090-HP
1-Methyl-1-propylpiperidinium hexafluorophosphate	$C_9H_{20}F_6NP$		RN-I-IL-0149-HP
1-Methyl-1-propylpiperidinium iodide	$C_9H_{20}IN$	17874-63-4	RN-I-IL-0170-HP

Product Name	Chemical formulae	CAS No.	Catalog No.
1-Methyl-1-propylpiperidinium tetrafluoroborate	$C_9H_{20}BFN_4$	879866-95-2	RN-I-IL-0150-HP
1-Methyl-1-propylpiperidinium trifluoromethanesulfonate	$C_{10}H_{20}F_3NO_3S$		RN-I-IL-0175-HP
PYRIDINIUM-BASED BIS(TRIFLUOROMETHYLSULFONYL)IMIDES			
1-Ethylpyridinium bis(trifluoromethylsulfonyl)imide	$C_9H_{10}F_6N_2O_4S_2$	712354-97-7	RN-I-IL-0211-HP
1-Ethyl-2-methylpyridinium bis(trifluoromethylsulfonyl)imide	$C_{10}H_{12}F_6N_2O_4S_2$	712354-99-9	RN-I-IL-0247-HP
1-Ethyl-3-methylpyridinium bis(trifluoromethylsulfonyl)imide	$C_{10}H_{12}F_6N_2O_4S_2$	841251-37-4	RN-I-IL-0214-HP
1-Ethyl-4-methylpyridinium bis(trifluoromethylsulfonyl)imide	$C_{10}H_{12}F_6N_2O_4S_2$	712355-03-8	RN-I-IL-0217-HP
1-Propylpyridinium bis(trifluoromethylsulfonyl)imide	$C_{10}H_{12}F_6N_2O_4S_2$		RN-I-IL-0212-HP
2-Methyl-1-propylpyridinium bis(trifluoromethylsulfonyl)imide	$C_{11}H_{14}F_6N_2O_4S_2$		RN-I-IL-0248-HP
3-Methyl-1-propylpyridinium bis(trifluoromethylsulfonyl)imide	$C_{11}H_{14}F_6N_2O_4S_2$	817575-06-7	RN-I-IL-0215-HP
4-Methyl-1-propylpyridinium bis(trifluoromethylsulfonyl)imide	$C_{11}H_{14}F_6N_2O_4S_2$		RN-I-IL-0218-HP
1-Butylpyridinium bis(trifluoromethylsulfonyl)imide	$C_{11}H_{14}F_6N_2O_4S_2$	187863-42-9	RN-I-IL-0213-HP
1-Butyl-2-methylpyridinium bis(trifluoromethylsulfonyl)imide	$C_{12}H_{16}F_6N_2O_4S_2$	384347-09-5	RN-I-IL-0228-HP
1-Butyl-3-methylpyridinium bis(trifluoromethylsulfonyl)imide	$C_{12}H_{16}F_6N_2O_4S_2$	344790-86-9	RN-I-IL-0216-HP
1-Butyl-4-methylpyridinium bis(trifluoromethylsulfonyl)imide	$C_{12}H_{16}F_6N_2O_4S_2$	475681-62-0	RN-I-IL-0219-HP
PYRIDINIUM-BASED TRIFLATES			
1-Ethylpyridinium trifluoromethanesulfonate	$C_8H_{10}F_3NO_3S$	3878-80-6	RN-I-IL-0186-HP
1-Propylpyridinium trifluoromethanesulfonate	$C_9H_{12}F_3NO_3S$		RN-I-IL-0250-HP
1-Butylpyridinium trifluoromethanesulfonate	$C_{10}H_{14}F_3NO_3S$	390423-43-5	RN-I-IL-0182-HP

Product Name	Chemical formulae	CAS No.	Catalog No.
1-Butyl-2-methylpyridinium trifluoromethanesulfonate	$C_{11}H_{16}F_3NO_3S$		RN-I-IL-0178-HP
1-Butyl-3-methylpyridinium trifluoromethanesulfonate	$C_{11}H_{16}F_3NO_3S$	857841-32-8	RN-I-IL-0179-HP
1-Butyl-4-methylpyridinium trifluoromethanesulfonate	$C_{11}H_{16}F_3NO_3S$	882172-79-4	RN-I-IL-0180-HP
1-Hexylpyridinium trifluoromethanesulfonate	$C_{12}H_{18}F_3NO_3S$	623167-81-7	RN-I-IL-0181-HP
PYRIDINIUM-BASED HEXAFLUOROPHOSPHATES			
1-Ethylpyridinium hexafluorophosphate	$C_7H_{10}F_6NP$	103173-73-5	RN-I-IL-0172-HP
1-Propylpyridinium hexafluorophosphate	$C_8H_{12}F_6NP$		RN-I-IL-0251-HP
1-Butylpyridinium hexafluorophosphate	$C_9H_{14}F_6NP$	186088-50-6	RN-I-IL-0088-HP
1-Butyl-2-methylpyridinium hexafluorophosphate	$C_{10}H_{16}F_6NP$		RN-I-IL-0127-HP
1-Butyl-3-methylpyridinium hexafluorophosphate	$C_{10}H_{16}F_6NP$	845835-03-2	RN-I-IL-0080-HP
1-Butyl-4-methylpyridinium hexafluorophosphate	$C_{10}H_{16}F_6NP$	401788-99-6	RN-I-IL-0084-HP
1-Hexylpyridinium hexafluorophosphate	$C_{11}H_{18}F_6NP$	797789-00-5	RN-I-IL-0114-HP
PYRIDINIUM-BASED TETRAFLUOROBORATES			
1-Ethylpyridinium tetrafluoroborate	$C_7H_{10}BF_4N$	350-48-1	RN-I-IL-0107-HP
1-Propylpyridinium tetrafluoroborate	$C_8H_{12}BF_4N$	239084-00-5	RN-I-IL-0252-HP
1-Butylpyridinium tetrafluoroborate	$C_9H_{14}BF_4N$	203389-28-0	RN-I-IL-0089-HP
1-Butyl-2-methylpyridinium tetrafluoroborate	$C_{10}H_{16}BF_4N$	286453-46-1	RN-I-IL-0111-HP
1-Butyl-3-methylpyridinium tetrafluoroborate	$C_{10}H_{16}BF_4N$	597581-48-1	RN-I-IL-0081-HP
1-Butyl-4-methylpyridinium tetrafluoroborate	$C_{10}H_{16}BF_4N$	343952-33-0	RN-I-IL-0085-HP
1-Hexylpyridinium tetrafluoroborate	$C_{11}H_{18}NBF_4$	474368-70-2	RN-I-IL-0108-HP

Product Name	Chemical formulae	CAS No.	Catalog No.
PYRIDINIUM-BASED CHLORIDES			
1-Butylpyridinium chloride	$C_9H_{14}ClN$	1124-64-7	RN-I-IL-0087-HP
1-Butyl-2-methylpyridinium chloride	$C_{10}H_{16}ClN$	112400-85-8	RN-I-IL-0129-HP
1-Butyl-3-methylpyridinium chloride	$C_{10}H_{16}ClN$	125652-55-3	RN-I-IL-0079-HP
1-Butyl-4-methylpyridinium chloride	$C_{10}H_{16}ClN$	112400-86-9	RN-I-IL-0083-HP
1-Hexylpyridinium chloride	$C_{11}H_{18}ClN$	6220-15-1	RN-I-IL-0131-HP
PYRIDINIUM-BASED BROMIDES			
1-Ethylpyridiniumbromide	$C_7H_{10}BrN$	1906-79-2	RN-I-IL-0171-HP
1-Propylpyridiniumbromide	$C_8H_{12}BrN$	873-71-2	RN-I-IL-0224-HP
1-Butylpyridiniumbromide	$C_9H_{14}BrN$	874-80-6	RN-I-IL-0086-HP
1-Butyl-2-methylpyridinium bromide	$C_{10}H_{16}BrN$	26576-84-1	RN-I-IL-0128-HP
1-Butyl-3-methylpyridinium bromide	$C_{10}H_{16}BrN$	26576-85-2	RN-I-IL-0078-HP
1-Butyl-4-methylpyridinium bromide	$C_{10}H_{16}BrN$	65350-59-6	RN-I-IL-0082-HP
1-Hexylpyridinium bromide	$C_{11}H_{18}BrN$	74440-81-6	RN-I-IL-0130-HP
PYRIDINIUM-BASED IODIDES			
1-Ethylpyridiniumiodide	$C_7H_{10}IN$	872-90-2	RN-I-IL-0173-HP
1-Propylpyridiniumiodide	$C_8H_{12}IN$	39868-02-5	RN-I-IL-0253-HP
1-Butylpyridiniumiodide	$C_9H_{14}IN$	874-81-7	RN-I-IL-0176-HP
1-Butyl-2-methylpyridiniumiodide	$C_{10}H_{16}NI$	13311-31-4	RN-I-IL-0183-HP
1-Butyl-3-methylpyridiniumiodide	$C_{10}H_{16}NI$	258273-67-5	RN-I-IL-0184-HP
1-Butyl-4-methylpyridiniumiodide	$C_{10}H_{16}NI$	32353-64-3	RN-I-IL-0185-HP
1-Hexylpyridiniumiodide	$C_{11}H_{18}IN$	7324-00-7	RN-I-IL-0177-HP

Product Name	Chemical formulae	CAS No.	Catalog No.
PYRROLIDINIUM-BASED IONIC LIQUIDS			
1-Butyl-1-methylpyrrolidinium bis(trifluoromethylsulfonyl)imide	$C_{11}H_{20}F_6N_2O_4S_2$	223437-11-4	RN-I-IL-0035-HP
1-Butyl-1-methylpyrrolidinium bromide	$C_9H_{20}BrN$	93457-69-3	RN-I-IL-0074-HP
1-Butyl-1-methylpyrrolidinium chloride	$C_9H_{20}ClN$	479500-35-1	RN-I-IL-0075-HP
1-Butyl-1-methylpyrrolidinium dicyanamide	$C_{11}H_{20}N_4$	370865-80-8	RN-I-IL-0041-HP
1-Butyl-1-methylpyrrolidinium hexafluorophosphate	$C_9H_{20}F_6NP$	330671-29-9	RN-I-IL-0076-HP
1-Butyl-1-methylpyrrolidinium iodide	$C_9H_{20}IN$	56511-17-2	RN-I-IL-0050-HP
1-Butyl-1-methylpyrrolidinium tetrafluoroborate	$C_9H_{20}BF_4N$	345984-11-4	RN-I-IL-0077-HP
1-Butyl-1-methylpyrrolidinium trifluoromethanesulfonate	$C_{10}H_{20}F_3NO_3S$	367522-96-1	RN-I-IL-0113-HP
1-Ethyl-1-methylpyrrolidinium bis(trifluoromethylsulfonyl)imide	$C_9H_{16}F_6NO_4S_2$	223436-99-5	RN-I-IL-0167-HP
1-Ethyl-1-methylpyrrolidinium bromide	$C_7H_{16}BrN$	69227-51-6	RN-I-IL-0163-HP
1-Ethyl-1-methylpyrrolidinium hexafluorophosphate	$C_7H_{16}F_6NP$	121057-90-7	RN-I-IL-0166-HP
1-Ethyl-1-methylpyrrolidinium iodide	$C_7H_{16}IN$	4186-68-9	RN-I-IL-0164-HP
1-Ethyl-1-methylpyrrolidinium tetrafluoroborate	$C_7H_{16}BF_4N$	117947-85-0	RN-I-IL-0165-HP
1-Ethyl-1-methylpyrrolidinium trifluoromethanesulfonate	$C_8H_{16}F_3NO_3S$	893443-18-0	RN-I-IL-0168-HP
1-Methyl-1-propylpyrrolidinium bis(trifluoromethylsulfonyl)imide	$C_{10}H_{18}F_6NO_4S_2$	223437-05-6	RN-I-IL-0044-HP
1-Methyl-1-propylpyrrolidinium bromide	$C_8H_{18}BrN$	608140-09-6	RN-I-IL-0145-HP
1-Methyl-1-propylpyrrolidinium chloride	$C_8H_{18}ClN$	528818-82-8	RN-I-IL-0146-HP
1-Methyl-1-propylpyrrolidinium dicyanamide	$C_{10}H_{18}N_4$	327022-60-6	RN-I-IL-0249-HP

Product Name	Chemical formulae	CAS No.	Catalog No.
1-Methyl-1-propylpyrrolidinium hexafluorophosphate	$C_8H_{18}F_6NP$	327022-58-2	RN-I-IL-0148-HP
1-Methyl-1-propylpyrrolidinium iodide	$C_8H_{18}IN$	56511-19-4	RN-I-IL-0161-HP
1-Methyl-1-propylpyrrolidinium tetrafluoroborate	$C_8H_{18}BF_4N$	327022-59-3	RN-I-IL-0147-HP
1-Methyl-1-propylpyrrolidinium trifluoromethanesulfonate	$C_9H_{18}F_3NO_3S$		RN-I-IL-0162-HP
1-Butyl-1-methylpyrrolidinium methylcarbonate	$C_{11}H_{23}NO_3$		RN-I-IN-0029-SG
1-Butyl-1-methylpyrrolidinium 1,1,2,2-tetrafluoroethanesulfonate	$C_{11}H_{21}F_4NO_3S$		RN-I-IL-0235-SG
1-Methyl-1-propylpyrrolidinium 1,1,2,2-tetrafluoroethanesulfonate	$C_{10}H_{19}F_4NO_3S$		RN-I-IL-0236-SG
1-Butyl-1-methylpyrrolidinium 1,1,2,2-tetrafluoroethanesulfonate	$C_{11}H_{21}F_4NO_3S$		RN-I-IL-0235-HP

PHOSPHONIUM-BASED IONIC LIQUIDS

Trihexyltetradecylphosphonium bis(trifluoromethylsulfonyl)imide	$C_{34}H_{68}F_6NO_4PS_2$	460092-03-9	RN-I-IN-0021-HP
Ethyltributylphosphonium diethyl phosphate	$C_{18}H_{42}O_4P_2$	20445-94-7	RN-I-IN-0018-TG
Tetrabutylphosphonium bromide	$C_{16}H_{36}BrP$	115-68-2	RN-I-IN-0014-TG
Tetrabutylphosphonium chloride	$C_{16}H_{36}ClP$	2304-30-5	RN-I-IN-0015-TG
Tetraoctylphosphonium bromide	$C_{32}H_{68}BrP$	23906-97-0	RN-I-IN-0016-TG
Tributylmethylphosphonium methyl sulfate	$C_{14}H_{33}O_4PS$	69056-62-8	RN-I-IN-0013-TG
Tributyltetradecylphosphonium chloride	$C_{26}H_{56}ClP$	81741-28-8	RN-I-IN-0017-TG
Tributyltetradecylphosphonium dodecylbenzenesulfonate	$C_{44}H_{85}O_3PS$		RN-I-IN-0019-TG
Trihexyltetradecylphosphonium bis(2,4,4-trimethylpentyl) phosphinate	$C_{48}H_{102}O_2P_2$	465527-58-6	RN-I-IN-0009-TG
Trihexyltetradecylphosphonium bromide	$C_{32}H_{68}BrP$	654057-97-3	RN-I-IN-0007-TG

Product Name	Chemical formulae	CAS No.	Catalog No.
Trihexyltetradecylphosphonium chloride	$C_{32}H_{68}ClP$	258864-54-9	RN-I-IN-0006-TG
Trihexyltetradecylphosphonium decanoate	$C_{42}H_{87}O_2P$	465527-65-5	RN-I-IN-0008-TG
Trihexyltetradecylphosphonium dicyanamide	$C_{34}H_{68}N_3P$	701921-71-3	RN-I-IN-0010-TG
Trihexyltetradecylphosphonium hexafluorophosphate	$C_{32}H_{68}F_6P_2$	374683-44-0	RN-I-IN-0012-TG
Triisobutylmethylphosphonium tosylate	$C_{20}H_{37}O_3PS$	344774-05-6	RN-I-IN-0011-TG
Tributylmethylphosphonium methylcarbonate	$C_{15}H_{33}O_3P$	120256-45-3	RN-I-IN-0030-SG
Trioctylmethylphosphonium methylcarbonate	$C_{27}H_{57}O_3P$		RN-I-IN-0031-SG
Tributylmethylphosphonium 1,1,2,2-tetrafluoroethanesulfonate	$C_{15}H_{21}F_4O_3PS$		RN-I-IL-0246-HP

Sulfonium-BASED IONIC LIQUIDS

Diethylmethylsulfonium bis(trifluoromethylsulfonyl)imide	$C_7H_{13}F_6NO_4S_3$	792188-85-3	RN-I-IL-0031-HP
Triethylsulfonium bis(trifluoromethylsulfonyl)imide	$C_8H_{15}F_6NO_4S_3$	321746-49-0	RN-I-IL-0030-HP
Trimethylsulfoniumiodide	C_3H_9IS	2181-42-2	RN-I-IL-0259-HP
Triethylsulfoniumiodide	$C_6H_{15}IS$	1829-92-1	RN-I-IL-0258-HP

READY-TO-USE-ELECTROLYTES FOR DSSCs

0.1M I3- Imidazolium -based Electrolyte	SP-361	RN-I-ES-001-HP
0,15M I3- Imidazolium-based Electrolyte	SP-382	RN-I-ES-002-HP
0,1M I3- Imidazolium-based Electrolyte	SP-355	RN-I-ES-003-HP
0,03M I3- BMIM-based Electrolyte	SP-163	RN-I-ES-004-HP
0,2M I3- PMIM/EMIM-based Electrolyte	SP-237	RN-I-ES-005-HP
0,2M I3- DiMIM/EMIM-based Electrolyte	SP-196	RN-I-ES-007-HP

At Reinste Nano Ventures we ardently believe that innovation and differentiation are the fundamental components of growth and enlightenment of any organization. With a portfolio of products catering to the needs of almost all scientific research communities in nanotechnology sphere, we help our customers by delivering the most pertinent nanomaterials with the assurance of quality. We rejoice in the fact that our products and services add values to our customers and in progression we build a priceless relationship of eminence with precision.

Novel Technology

The main technology points concern the development of processes induced by low-temperature plasma on different surfaces and in organized mono-molecular films (Langmuir-Blodgett and Self-Assembly Films), in atomically flat inorganic solids and in liquid interfaces and advanced technologies of synthesis and modification of nano-materials.

Chemical and low temperature plasma modification of nanopowders are performed with the purpose of functionalization of nano-particle's surface assisted by new plasma-chemical methods developed for ultra-dispersed materials. This approach leads to a new family of industrial nano-products with improved and tailor-made properties.

Two technologies for industrial production of NanoDiamonds, NanoCeramics and NanoMetals

Controlled Detonation Synthesis (CDS)

Controlled Detonation Synthesis is based on super-high pressure developed at explosion in closed volume. At explosion precursor material, immersed in specific gas medium, is atomized.

During the fly from the middle of reactor to the reactor walls atoms are clusterized and form nanoparticles. During whole synthesis process the super-high pressure is supported which enable formation not only of different NanoCeramics with unusual crystalline lattice, but also of cubic carbon nanoparticles (NanoDiamonds).

Having in disposal big industrial detonation reactors PlasmaChem is able to deliver tons of detonation nanoproducts per month.

Hot Plasma Jet Synthesis (HPJS)

Hot plasma process know-how is used to produce nanoparticles.

Precursor material is atomized in plasma arc with followed clusterization to nanoparticles optionally with additional plasma chemical conversion to anothaer material than precursor. The special precautions are done to get real nanocrystals (not simply mixed phases) and to exclude big agglomerate formation.

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