

Gas To Liquid
GTL



GRIT
gases research innovation
& technology

GTL

Gas to liquid



Solutions of acid or basic gases dissolved in solvents.

Tailor-made products delivered in containers of various sizes for a large number of chemical synthesis applications.

Main applications of these solutions are oriented to the pharmaceutical sector, for the manufacturing of active pharmaceutical ingredients (APIs) and the fine chemicals market for synthetic processes.

Main Advantages:

Less risks

- ✓ Avoid handling gases, especially dangerous ones
- ✓ Avoid specialized training in gas handling
- ✓ Avoid waste generated from mixing gases

More productivity

- ✓ Avoid areas dedicated to gas storage
- ✓ Reactors can be used for higher added value reactions
- ✓ Avoid the maintenance cost

Greater flexibility

- ✓ Just-in-Time service
- ✓ GTL can be supplied at all stages of API development, from R&D to manufacturing
- ✓ Customized solutions both in components and concentration

GTL

Gas to liquid



Types of mixtures:

Acid solutions

- > Hydrogen Chloride (HCl) in 1,4 dioxane (Dioxane)
- > Hydrogen Chloride (HCl) in 2-propanol (IPA)
- > Hydrogen Chloride (HCl) in Butanol (BuOH)
- > Hydrogen Chloride (HCl) in Cyclopentyl Methyl Ether (CPME)
- > Hydrogen Chloride (HCl) in Ethyl Acetate (EtOAc)
- > Hydrogen Chloride (HCl) in Ethanol (EtOH)
- > Hydrogen Chloride (HCl) in Isobutyl Alcohol (iBuOH)
- > Hydrogen Chloride (HCl) in Isopropyl Acetate (IPrOAc)
- > Hydrogen Chloride (HCl) in Methanol (MeOH)
- > Hydrogen Chloride (HCl) in Water (H₂O)

Basic solutions

- > Ammonia (NH₃) in 2-propanol (IPA)
- > Ammonia (NH₃) in Ethanol (EtOH)
- > Ammonia (NH₃) in Methanol (MeOH)
- > Ammonia (NH₃) in Water (H₂O)
- > Ethylamine (EA) in Tetrahydrofuran (THF)
- > Ethylamine (EA) in Water (H₂O)
- > Monomethylamine (MMA) in Ethanol (EtOH)
- > Monomethylamine (MMA) in Methanol (MeOH)
- > Monomethylamine (MMA) in water (H₂O)
- > Dimethylamine (DMA) in Tetrahydrofuran (THF)

Acid

solutions



GTL / Acid solutions

Hydrogen Chloride (HCl) in 1,4 dioxane
(Dioxane)



Solution: Hydrogen Chloride (HCl) in 1,4 dioxane (Dioxane)

Product description:

Hydrogen Chloride (HCl) in 1,4 dioxane (Dioxane) at various concentrations. We serve it in different formats ready to be used in production.

We also manufacture on a laboratory scale.

Technical characteristics:



N/A

CAS number



1.05 Kg/L

Density



< 0.5 %

Humidity



Colourless

Appearance

Concentrations: 4 N

For other concentrations contact us.

Applications:



Pharma



Intermediates



Chemical synthesis



Cosmetics

Packaging:

> **Reydrum:** 205 L.

> **IBC:** 1000 L.

> **Others:** We adapt to your needs. Contact us.

GTL / Acid solutions

Hydrogen Chloride (HCl) in 2-propanol (IPA)



Solution: Hydrogen Chloride (HCl) in 2-propanol (IPA)

Product description:

Hydrogen Chloride (HCl) in 2-propanol (IPA) at various concentrations. We serve it in different formats ready to be used in production.

We also manufacture on a laboratory scale.

Technical characteristics:



N/A

CAS number



0.90 Kg/L

Density



< 0.7%

Humidity



Colourless

Appearance

Concentrations: 1.25M - 6M, 3% w/w - 24% w/w | For other concentrations contact us

Applications:



Pharma



Intermediates



Chemical synthesis



Cosmetics

Packaging:

> **Reydrum:** 205 L.

> **IBC:** 1000 L.

> **Others:** We adapt to your needs. Contact us.

GTL / Acid solutions

Hydrogen Chloride (HCl) in Butanol (BuOH)



Solution: Hydrogen Chloride (HCl) in Butanol (BuOH)

Product description:

Hydrogen Chloride (HCl) in Butanol (BuOH) at various concentrations. We serve it in different formats ready to be used in production.

We also manufacture on a laboratory scale.

Technical characteristics:



N/A

CAS number



0.89 Kg/L

Density



< 0.1 %

Humidity



Colourless

Appearance

Concentrations: 24% w/w

For other concentrations contact us.

Applications:



Pharma



Intermediates



Chemical synthesis



Cosmetics

Packaging:

> **Reydrum:** 205 L.

> **IBC:** 1000 L.

> **Others:** We adapt to your needs. Contact us.

GTL / Acid solutions

Hydrogen Chloride (HCl) in Cyclopentyl Methyl Ether (CPME)



Solution: Hydrogen Chloride (HCl) in Cyclopentyl Methyl Ether (CPME)

Product description:

Hydrogen Chloride (HCl) in Cyclopentyl Methyl Ether (CPME) at various concentrations. We serve it in different formats ready to be used in production.

We also manufacture on a laboratory scale.

Technical characteristics:



N/A

CAS number



0.88 Kg/L

Density



< 0.3 %

Humidity



Colourless

Appearance

Concentrations: 3M, 3.2M, 3.4M

For other concentrations contact us.

Applications:



Pharma



Intermediates



Chemical synthesis



Cosmetics

Packaging:

> **Reydrum:** 205 L.

> **IBC:** 1000 L.

> **Others:** We adapt to your needs. Contact us.

GTL / Acid solutions

Hydrogen Chloride (HCl) in Ethanol (EtOH)



Solution: Hydrogen Chloride (HCl) in Ethanol (EtOH)

Product description:

Hydrogen Chloride (HCl) in Ethanol (EtOH) at various concentrations. We serve it in different formats ready to be used in production.

We also manufacture on a laboratory scale.

Technical characteristics:



N/A

CAS number



0.90 Kg/L

Density



< 0.5 %

Humidity



Colourless

Appearance

Concentrations: 2M - 3.5M, 30% w/w

| For other concentrations contact us.

Applications:



Pharma



Intermediates



Chemical synthesis



Cosmetics

Packaging:

> **Reydrum:** 205 L.

> **IBC:** 1000 L.

> **Others:** We adapt to your needs. Contact us.

GTL / Acid solutions

Hydrogen Chloride (HCl) in Ethyl Acetate (EtOAc)



Solution: Hydrogen Chloride (HCl) in Ethyl Acetate (EtOAc)

Product description:

Hydrogen Chloride (HCl) in Ethyl Acetate (EtOAc) at various concentrations. We serve it in different formats ready to be used in production.

We also manufacture on a laboratory scale.

Technical characteristics:



N/A

CAS number



0.91 Kg/L

Density



< 0.5 %

Humidity



Colourless

Appearance

Concentrations: 1M, 2M, 2.5M, 3M

For other concentrations contact us.

Applications:



Pharma



Intermediates



Chemical synthesis



Cosmetics

Packaging:

> **Reydrum:** 205 L.

> **IBC:** 1000 L.

> **Others:** We adapt to your needs. Contact us.

GTL / Acid solutions

Hydrogen Chloride (HCl) in Isobutyl Alcohol (iBuOH)



Solution: Hydrogen Chloride (HCl) in Isobutyl Alcohol (iBuOH)

Product description:

Hydrogen Chloride (HCl) in Isobutyl Alcohol (iBuOH) at various concentrations. We serve it in different formats ready to be used in production.

We also manufacture on a laboratory scale.

Technical characteristics:



N/A

CAS number



0.90 Kg/L

Density



< 0.5 %

Humidity



Colourless

Appearance

Concentrations: 21.5% w/w

| For other concentrations contact us.

Applications:



Pharma



Intermediates



Chemical synthesis



Cosmetics

Packaging:

> **Reydrum:** 205 L.

> **IBC:** 1000 L.

> **Others:** We adapt to your needs. Contact us.

GTL / Acid solutions

Hydrogen Chloride (HCl) in Isopropyl Acetate (IPrOAc)



Solution: Hydrogen Chloride (HCl) in Isopropyl Acetate (IPrOAc)

Product description:

Hydrogen Chloride (HCl) in Isopropyl Acetate (IPrOAc) at various concentrations. We serve it in different formats ready to be used in production.

We also manufacture on a laboratory scale.

Technical characteristics:



N/A

CAS number



0.89 Kg/L

Density



< 0.5 %

Humidity



Colourless

Appearance

Concentrations: 3.1M, 3.5M

| For other concentrations contact us.

Applications:



Pharma



Intermediates



Chemical synthesis



Cosmetics

Packaging:

> **Reydrum:** 205 L.

> **Others:** We adapt to your needs. Contact us.

GTL / Acid solutions

Hydrogen Chloride (HCl) in Methanol (MeOH)



Solution: Hydrogen Chloride (HCl) in Methanol (MeOH)

Product description:

Hydrogen Chloride (HCl) in Methanol (MeOH) at various concentrations. We serve it in different formats ready to be used in production.

We also manufacture on a laboratory scale.

Technical characteristics:



N/A

CAS number



0.82 Kg/L

Density



< 0.7%

Humidity



Colourless

Appearance

Concentrations: 3M, 5.5% w/w

| For other concentrations contact us.

Applications:



Pharma



Intermediates



Chemical synthesis



Cosmetics

Packaging:

> **Reydrum:** 205 L.

> **IBC:** 1000 L.

> **Others:** We adapt to your needs. Contact us.

GTL / Acid solutions

Hydrogen Chloride (HCl) in Water (H₂O)



Solution: Hydrogen Chloride (HCl) in Water (H₂O)

Product description:

Hydrogen Chloride (HCl) in Water (H₂O) at various concentrations. We serve it in different formats ready to be used in production.

We also manufacture on a laboratory scale.

Technical characteristics:



N/A

CAS number



1.03 Kg/L

Density



N/A

Humidity



Colourless

Appearance

Concentrations: 2M, 33% w/w, 37% w/w

| For other concentrations contact us.

Applications:



Pharma



Intermediates



Chemical synthesis



Cosmetics

Packaging:

> **Reydrum:** 205 L.

> **IBC:** 1000 L.

> **Others:** We adapt to your needs. Contact us.

Basic

solutions



GTL / Basic solutions

Ammonia (NH₃) in 2-propanol (IPA)



Solution: Ammonia (NH₃) in 2-propanol (IPA)

Product description:

Ammonia (NH₃) in 2-propanol (IPA) at various concentrations. We serve it in different formats ready to be used in production.

We also manufacture on a laboratory scale.

Technical characteristics:



N/A

CAS number



0.77 Kg/L

Density



< 0.5 %

Humidity



Colourless

Appearance

Concentrations: 2M

For other concentrations contact us.

Applications:



Pharma



Intermediates



Chemical synthesis



Cosmetics

Packaging:

> **Reydrum:** 205 L.

> **Others:** We adapt to your needs. Contact us.

GTL / Basic solutions

Ammonia (NH₃) in Ethanol (EtOH)



Solution: Ammonia (NH₃) in Ethanol (EtOH)

Product description:

Ammonia (NH₃) in Ethanol (EtOH) at various concentrations. We serve it in different formats ready to be used in production.

We also manufacture on a laboratory scale.

Technical characteristics:



N/A

CAS number



0.77 Kg/L

Density



< 0.5 %

Humidity



Colourless

Appearance

Concentrations: 2M

For other concentrations contact us.

Applications:



Pharma



Intermediates



Chemical synthesis



Cosmetics

Packaging:

> **Reydrum:** 205 L.

> **Others:** We adapt to your needs. Contact us.

GTL / Basic solutions

Ammonia (NH₃) in Methanol (MeOH)



Solution: Ammonia (NH₃) in Methanol (MeOH)

Product description:

Ammonia (NH₃) in Methanol (MeOH) at various concentrations. We serve it in different formats ready to be used in production.

We also manufacture on a laboratory scale.

Technical characteristics:



N/A

CAS number



0.77 Kg/L

Density



< 0.7 %

Humidity



Colourless

Appearance

Concentrations: 6M, 7M, 8M

| For other concentrations contact us.

Applications:



Pharma



Intermediates



Chemical synthesis



Cosmetics

Packaging:

> **Reydrum:** 205 L.

> **Others:** We adapt to your needs. Contact us.

GTL / Basic solutions

Ammonia (NH₃) in Water (H₂O)



Solution: Ammonia (NH₃) in Water (H₂O)

Product description:

Ammonia (NH₃) in Water (H₂O) at various concentrations. We serve it in different formats ready to be used in production.

We also manufacture on a laboratory scale.

Technical characteristics:



N/A

CAS number



0.90 Kg/L

Density



N/A

Humidity



Colourless

Appearance

Concentrations: 25% w/w

| For other concentrations contact us.

Applications:



Pharma



Intermediates



Chemical synthesis



Cosmetics

Packaging:

> **Reydrum:** 205 L.

> **Others:** We adapt to your needs. Contact us.

GTL / Basic solutions

Ethylamine (EA) in Tetrahydrofuran (THF)



Solution: Ethylamine (EA) in Tetrahydrofuran (THF)

Product description:

Ethylamine (EA) in Tetrahydrofuran (THF) at various concentrations. We serve it in different formats ready to be used in production.

We also manufacture on a laboratory scale.

Technical characteristics:



N/A

CAS number



0.85 Kg/L

Density



< 1.0 %

Humidity



Colourless to reddish brown

Appearance

Concentrations: 2.5M

For other concentrations contact us.

Applications:



Pharma



Intermediates



Chemical synthesis



Cosmetics

Packaging:

> **Reydrum:** 205 L.

> **Others:** We adapt to your needs. Contact us.

GTL / Basic solutions

Ethylamine (EA) in Water (H₂O)



Solution: Ethylamine (EA) in Water (H₂O)

Product description:

Ethylamine (EA) in Water (H₂O) at various concentrations. We serve it in different formats ready to be used in production.

We also manufacture on a laboratory scale.

Technical characteristics:



N/A

CAS number



0.85 Kg/L

Density



N/A

Humidity



Colourless

Appearance

Concentrations: 70% w/w

For other concentrations contact us.

Applications:



Pharma



Intermediates



Chemical synthesis



Cosmetics

Packaging:

> **Reydrum:** 205 L.

> **Others:** We adapt to your needs. Contact us.

GTL / Basic solutions

Monomethylamine (MMA) in Ethanol (EtOH)



Solution: Monomethylamine (MMA) in Ethanol (EtOH)

Product description:

Monomethylamine (MMA) in Ethanol (EtOH) at various concentrations. We serve it in different formats ready to be used in production.

We also manufacture on a laboratory scale.

Technical characteristics:



N/A

CAS number



0.76 Kg/L

Density



< 0.7 %

Humidity



Colourless

Appearance

Concentrations: 33% w/w, 40% w/w

| For other concentrations contact us.

Applications:



Pharma



Intermediates



Chemical synthesis



Cosmetics

Packaging:

> **Reydrum:** 205 L.

> **Others:** We adapt to your needs. Contact us.

GTL / Basic solutions

Monomethylamine (MMA) in Methanol (MeOH)



Solution: Monomethylamine (MMA) in Methanol (MeOH)

Product description:

Monomethylamine (MMA) in Methanol (MeOH) at various concentrations. We serve it in different formats ready to be used in production.

We also manufacture on a laboratory scale.

Technical characteristics:



N/A

CAS number



0.76 Kg/L

Density



< 0.5 %

Humidity



Colourless

Appearance

Concentrations: 33% w/w, 40% w/w

| For other concentrations contact us.

Applications:



Pharma



Intermediates



Chemical synthesis



Cosmetics

Packaging:

> **Reydrum:** 205 L.

> **Others:** We adapt to your needs. Contact us.

GTL / Basic solutions

Monomethylamine (MMA) in water (H2O)



Solution: Monomethylamine (MMA) in water (H2O)

Product description:

Monomethylamine (MMA) in water (H2O) at various concentrations. We serve it in different formats ready to be used in production.

We also manufacture on a laboratory scale.

Technical characteristics:



N/A

CAS number



0.85 Kg/L

Density



N/A

Humidity



Colourless

Appearance

Concentrations: 40% w/w

For other concentrations contact us.

Applications:



Pharma



Intermediates



Chemical synthesis



Cosmetics

Packaging:

> **Reydrum:** 205 L.

> **Others:** We adapt to your needs. Contact us.

GTL / Basic solutions

Dimethylamine (DMA) in Tetrahydrofuran (THF)



Solution: Dimethylamine (DMA) in Tetrahydrofuran (THF)

Product description:

Dimethylamine (DMA) in Tetrahydrofuran (THF) at various concentrations. We serve it in different formats ready to be used in production.

We also manufacture on a laboratory scale.

Technical characteristics:



N/A

CAS number



0.86 Kg/L

Density



< 0.7 %

Humidity



Colourless to reddish brown

Appearance

Concentrations: 2M

| For other concentrations contact us.

Applications:



Pharma



Intermediates



Chemical synthesis



Cosmetics

Packaging:

> **Reydrum:** 205 L.

> **Others:** We adapt to your needs. Contact us.

Normative:

GRIT (Gases Research Innovation & Technology) is committed to the continuous improvement of our inbuilt Quality Control, Environment and Major Accident Prevention Systems as well as close collaboration with our product and service providers. The scope of the system includes the packaging, commercialisation, storage and innovation of technical gases and the management of residual fluorinated gas and halogenated solvents.

All this work is reflected in our certificates ISO 9001 & ISO 14001.

More information:

If you want more information about our products, contact us.

EUROPE

GRIT, Gases Research Innovation & Technology

BARCELONA

Our plant:

P. I. "El Punsic", parcela 8.3,
08279 Avinyó, Barcelona. Spain.

Our office:

C/ Consell de Cent 419, Pral 1^a y 2^a,
08009, Barcelona. Spain.

Phone: (+34) 932 721 400

E-mail: grit@grit.es

Website: www.gasesgrit.com

USA

Summit Refrigerants

HOUSTON

8541 East North Belt
Humble, Texas 77396

Phone: (+1) 281-540-2653

Toll-Free: (+1) 866-971-2653

Fax: (+1) 281-540-0385

DALLAS

2080 McDaniel Drive
Suite 200
Carrollton, Texas 75006

Phone: (+1) 469-458-3195

Fax: (+1) 469-458-3085

BATON ROUGE

10080 Industriplex Avenue
Gonzales, LA 70737

Phone: (+1) 225-744-2653

Fax: (+1) 225-677-6106



GRIT
gases research innovation
& technology

Seeking synergies