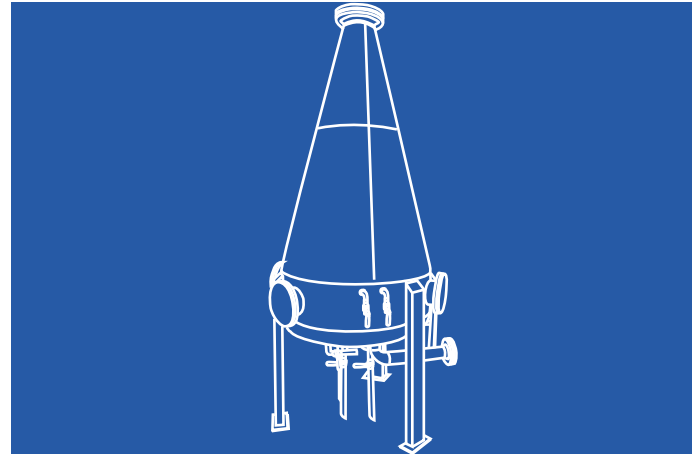


INJECTOR-BICONE

- Economical gas injection
- Minimal hydraulic loss
- Easy installation into existing plants



The Concept

An economical static mixer designed by Air Liquide, the **INJECTOR-BICONE** ensures high efficiency of gas enrichment with minimal hydraulic loss.

The **INJECTOR-BICONE** is able to solubilize different gases like carbon dioxide (CO₂), oxygen (O₂) and ozone (O₃) into water at saturation limit. This technology is very efficient in process water where the gas solubility is limited by operating conditions.

GAS	What for	Remarks
Carbon dioxide CO ₂	pH control Hardness regulation Calcium precipitation	High gas injection efficiency even when temperature >40°C
Oxygen O ₂	Drinking water: oxidation of chemical species (iron, sulphur, manganese)	Oxides are removed by filtration
Ozone O ₃	Disinfection (Fish farming) Detoxication Effective sludge treatment	Works as small scale reactor

Applicable Industries

Industry	Application
Food industry	CO ₂ for pH control and carbonation O ₃ for disinfection
Mining and Extractive Metallurgy Petroleum Refining Chemical industry Pulp and Paper Wastewater Treatment	CO ₂ for pH control in all industries and hardness regulation in drinking water O ₂ for metal removal in drinking water O ₃ for advanced biological treatment and removal of toxic components (e.g. cyanides, phenols...)
Steel industry	CO ₂ for calcium precipitation in process water
Electric Power	CO ₂ for descaling of cooling water

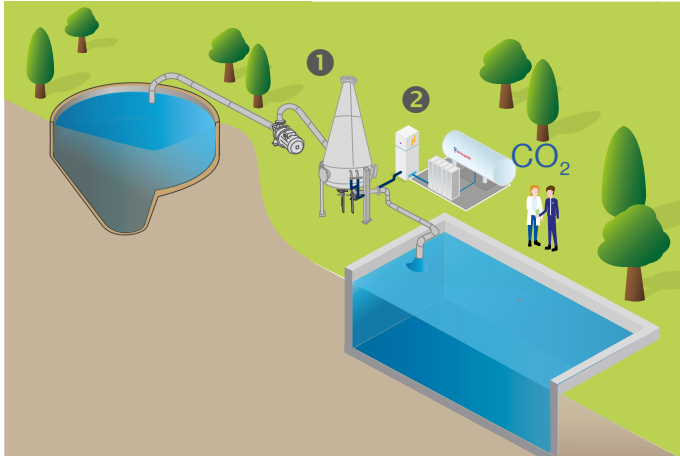
Special Features

INJECTOR-BICONEs (1) have been used for more than 40 years at customer sites with minimal maintenance.

For Carbon Dioxide (CO₂) dissolution

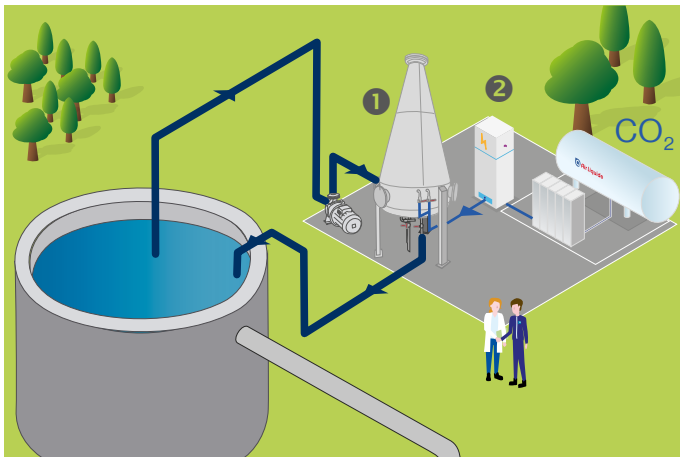
A **GAS CONTROL CABINET (2)** is installed close to the basin and connected to the gas injection unit.

For water flow typically lower than 1000 m³/h, the **INJECTOR-BICONE** is integrated into existing main pipes.



Main pipe configuration

For water flows typically higher than 1000m³/h, the **INJECTOR-BICONE** is installed in a bypass mode (supersaturation of a partial flow).

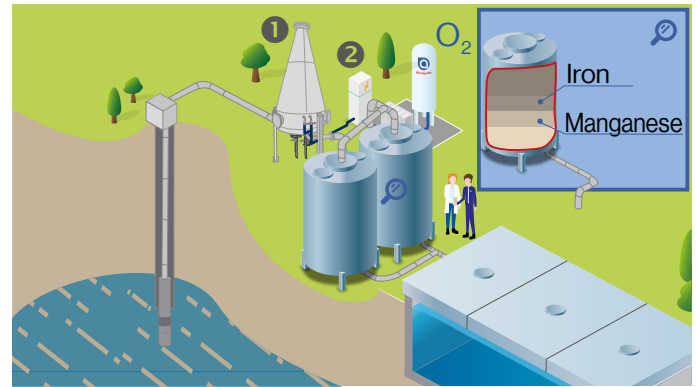


Bypass loop configuration

These configurations are well suited for the following offers:

- Nexelia for pH Control
- Nexelia for Remineralization
- Nexelia for Uranium In-Situ Leaching

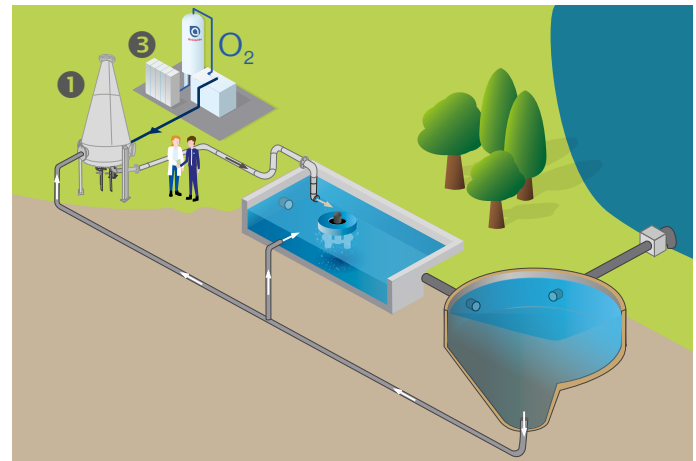
For Oxygen (O₂) dissolution



This type of installation is well suited for the **Nexelia for Groundwater** offer.

For Ozone (O₃) dissolution

INJECTOR-BICONE is the best option for a small scale ozone reactor of an **OZONATION UNIT (3)**



This type of installation is well suited for the **Nexelia for Biological Treatment** offer.



This type of installation is well suited for the **Nexelia for Tertiary Treatment** offer.

Our experts provide seamless installation and activation with minimal interruption to your operations.

The high efficiency of this system is based on the counter-flow principle of gas and water, which results in a high gas-liquid interface. The mass transfer is optimized by the conical shape of the mixing vessel. The system is resistant to abrasion.

Technical Data

A variety of sizes, materials and pressure setups allow the adaptation of an **INJECTOR-BICONE** to your process.

Following a careful review of your process parameters and gas requirements, our experts design your equipment solution to match your needs. They can also perform laboratory tests in our dedicated facilities if needed.

Standard sizes include:

Size	Water flow (m ³ /h)	Total volume (l)	Total height (m)	Total weight (t)	Oxygen flow rate (kg/h) at 20 °C, 1 bar
BC 5	5	90	1.50	0.14	0.22
BC 30	30	230	2.30	0.33	1.30
BC 75	75	410	2.30	0.55	3.20
BC 100	100	770	2.50	1.00	4.30
BC 150	150	980	2.50	1.20	6.50
BC 200	200	1100	2.90	1.40	8.60
BC 300	300	1400	3.50	1.70	12.90
BC 450	450	4050	4.30	5.00	19.40
BC 600	600	6400	5.50	8.00	25.80
BC 900	900	8600	6.10	10.70	38.70
BC 1500	1500	16800	8.20	21.00	65.10
BC 1800	1800	20800	8.60	25.60	78.12

Related Offer

The **INJECTOR-BICONE** is part of **Nexelia for Biological Treatment, Nexelia for Tertiary Treatment, Nexelia for pH Control, Nexelia for Groundwater, Nexelia for Remineralization** and **Nexelia for Uranium In-Situ Leaching** solutions, which are designed and tailored to meet your specific needs. These comprehensive offers combine the best of our gas-application technologies and expert support. As with all solutions under the **Nexelia** label, we work closely with you to pre-define a concrete set of results, and we commit to delivering them.

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