

# EPL Co., Ltd.

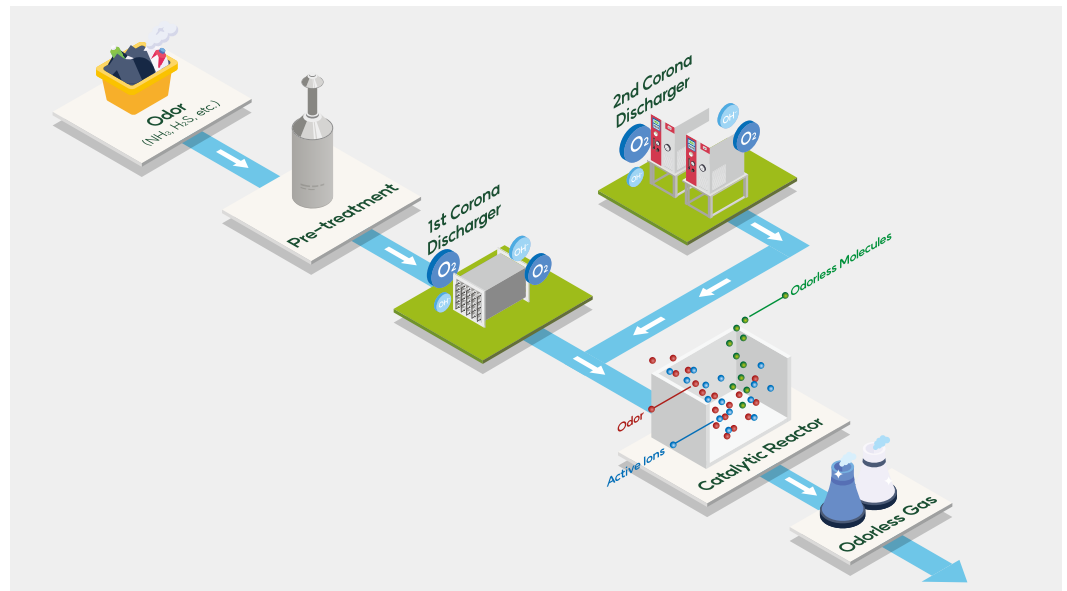


## Low Temperature Plasma Deodorizer



# Low Temperature Plasma Deodorizer

## Introduction



After oxidizing and decomposing the odor by active ions in the corona discharge part, the remaining odor is removed from the rear catalyst reaction part.

Part	Functions
Pretreatment System	Improvement of reactivity and deodorization efficiency through pretreatment (wet scrubbing, chemical cleaning, etc.) Selective application is possible, depending on site conditions such as high-concentration odor.
Corona Discharge Part	Induction of plasma reaction by high voltage(Corona) discharge Oxidation and decomposition of odorous gases through active ions
Catalyst Reaction Part	Improvement of deodorization efficiency by activating oxidation reaction with catalyst

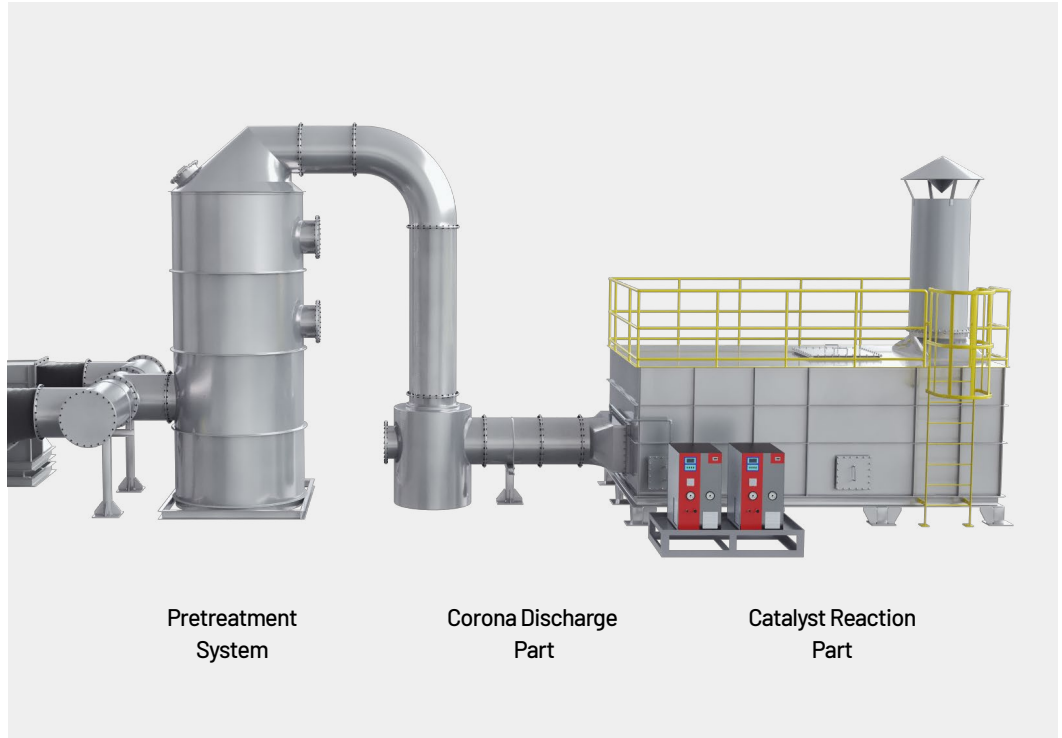
## Features

- Ion oxidation technology through corona discharge and active ions
- Improvement of deodorization through catalyst
- Good effect on complex odors
- Less secondary pollutants and eco-friendly technology
- Low energy and chemical costs for maintenance

## Application

- Influent and relay pump station of Wastewater Treatment Plant
- Sludge Treatment Facility
- Non-point source pollution reduction facility
- Livestock & Septage treatment plant
- Leachate treatment plant

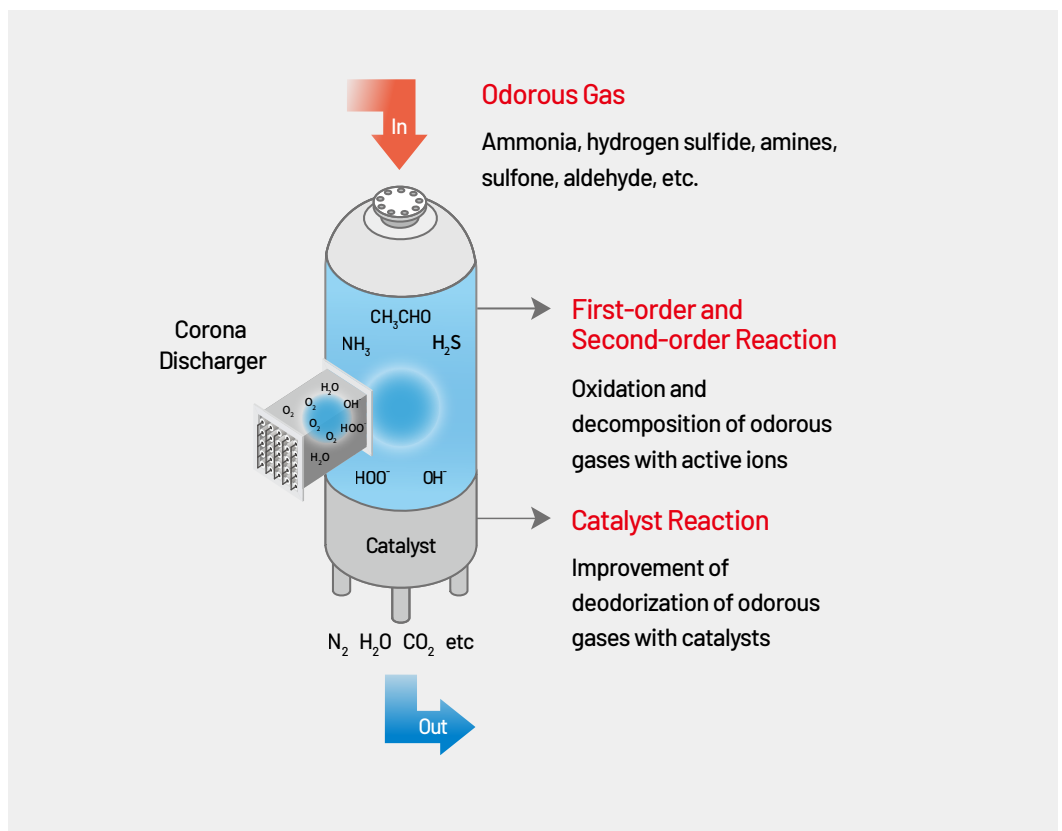
## Deodorization Principle



Pretreatment System

Corona Discharge Part

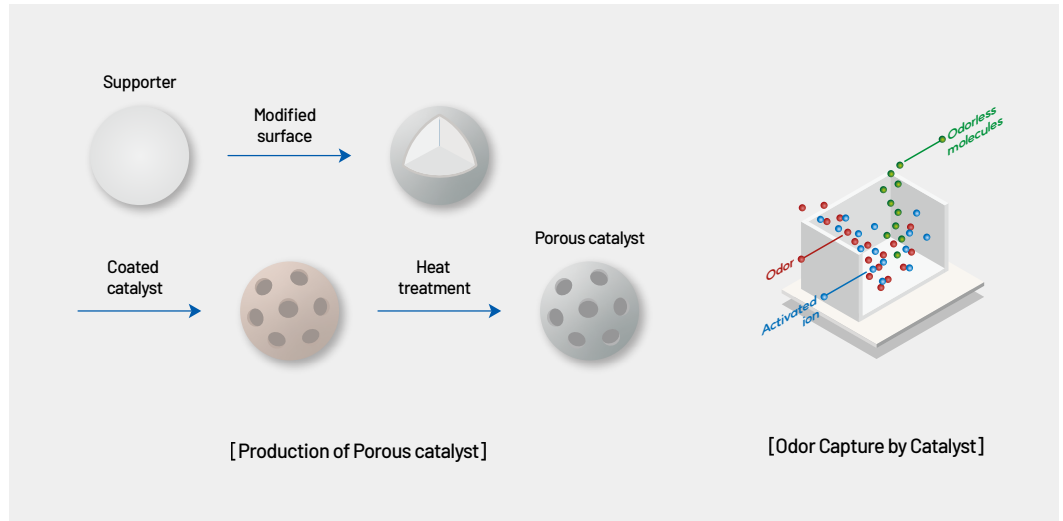
Catalyst Reaction Part



# Low Temperature Plasma Deodorizer

## Deodorization Principle

Deodorization  
Reaction Activation  
Technology by  
Catalyst



- Customized catalyst coating according to odor-causing substances
- Induction of activated ionic reaction
- Conversion of odor molecules to odorless molecules by the ionic reaction
- Improvement of catalyst durability by active ions

Catalyst for Low Temperature Gas

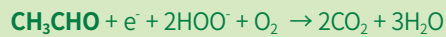
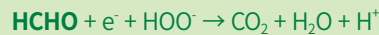
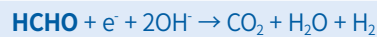
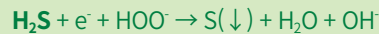
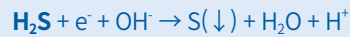
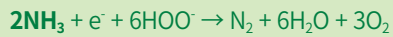
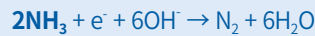


Catalyst for High Temperature Gas



## Deodorization Principle

Formula for removing odor molecules



- Ammonia molecules react with reactive oxygen species/free radicals to produce water and convert to nitrogen.
- Hydrogen sulfide produces water and converts it into elemental sulfur (S).
- Acetic aldehyde converts to carbon dioxide and water.
- The generated cations and anions combine and convert into water.

## Technology comparison

Category	Low temperature plasma	Adsorption Type	Chemical cleaning tower	Bio-filter
Process	· Oxidation and decomposition of odors with corona discharge, plasma ions, and catalysts	· With adsorption capacity of activated carbon to capture odors	· Chemical reaction by aqueous solution like water, acid, alkali, etc.	· Oxidation and decomposition by microbial in the bio-carrier
Advantage	· Good effect on complex odors · Strong point for load fluctuations · Less secondary pollutants and eco-friendly solution	· Easy installation · Competitive cost	· Simple system · Effect for matter with high chemical reactivity	· Less secondary pollutants and eco-friendly solution
Disadvantage	· Pretreatment for high-concentration odors is needed	· Frequent replacement of activated carbon · Contamination caused by the desorption of pollutants from activated carbon	· Difficulty of maintenance and generation of huge chemical wastewater · High risk of corrosion for equipment	· Large installation area and high CAPEX · Weakness to load fluctuations
Application	· Applicable to various odors including combined odors	· Applicable to low-concentration odors	· Applicable to specific odors	· Applicable to sites where microorganisms can survive
Installation cost	Medium	Low	Medium	High
Maintenance cost	Low	High	High	Medium

# Low Temperature Plasma Deodorizer

## Reference

Location	Capacity
Busan OO Sewage Treatment Plant	80CMM
Busan OO Sewage Treatment Plant	400CMM
Seoul OO Water Recycling Center	120CMM, 10CMM
Busan OO Non-Point Source Pollution Reduction Facility	40CMM
Ulsan OO Sewage Treatment Plant	200CMM
Ulsan OO Sewage Treatment Plant	210CMM
Busan OO Sewage Treatment Plant	180CMM
Busan OO Sewage Treatment Plant	50CMM

Busan OO Sewage Treatment Plant



Busan OO Sewage Treatment Plant



Seoul OO Water Recycling Center



Seoul OO Water Recycling Center



Busan OO Non-Point Source Pollution Reduction Facility



Ulsan OO Sewage Treatment Plant



## Performance Certificate

22-GAB0288



# 성능인증서

- 제조업체명 : 주식회사 이피엘
- 대표자성명 : 최금연
- 소재지 : 부산광역시 금정구 두실로 37
- 수검공장 : 부산광역시 기장군 장안읍 명례산단6로 99
- 인증품목 : 코로나 방전 및 저온복합산화촉매를 이용한 탈취기 [ACE-OHS-02]
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「중소기업제품 구매촉진 및 판로지원에 관한 법률」 제15조 및 같은 법 시행규칙 제11조4항에 따라 위와 같이 성능인증을 합니다.

\* 뒷면 「성능인증 재발급 이력」에 계속

2022년 07월 20일

중소벤처기업부장





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