

Disclosed is a process for oxidizing formaldehyde to carbon dioxide and water without the addition of energy. A mixture of formaldehyde and an oxidizing agent (e.g., ambient air containing formaldehyde) is exposed to a catalyst which includes a noble metal dispersed on a metal oxide which possesses more than one oxidation state. Especially good results are obtained when the noble metal is platinum, and the metal oxide which possesses more than one oxidation state is tin oxide. A promoter (i.e., a small amount of an oxide of a transition series metal) may be used in association with the tin oxide to provide very beneficial results.

5586433

**PROCESS AND APPARATUS FOR
SELECTIVE CATALYZED
NO-REDUCTION IN
OXYGEN-CONTAINING EXHAUST
GASES**

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A process and apparatus for the selective catalyzed NO_x reduction in oxygen-containing exhaust gases of internal-combustion engines. For improving the reduction of nitric oxides, hydrocarbons and air are supplied to the exhaust gas purifier and, for producing reactive short-chained unsaturated hydrocarbons, a defined quantity of fuel from the stored fuel intended for the fuel supply of the internal-combustion engine is catalytically cracked and is oxidized by the simultaneous supply of air. The resulting species are guided into the exhaust gas flow of the exhaust gases which are to be purified.

5587135

**PROCESS FOR THE CATALYTIC
DECOMPOSITION OF DINITROGEN
MONOXIDE IN A GAS STREAM**

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PCT No. PCT/EP94/00081 Sec. 371 Date Mar. 24, 1995 Sec. 102(e) Date Mar. 24, 1995 PCT Filed Jan. 13, 1994 PCT Pub. No. WO94/16798 PCT Pub. Date Aug. 4, 1994. A process for the catalytic decomposition of dinitrogen monoxide in a gas stream by contacting the gas stream at temperatures of 200° degrees-900°C. and pressures of 0.1 to 20 bar with a catalyst free of noble metals, the catalyst being prepared by combining a spinel CuAl₂O₃ with another spinel-forming metal component selected from the group consisting of tin, lead, zinc, magnesium, calcium, strontium and barium or mixtures thereof in elemental form or as an oxide or salt, and calcining at temperatures of 300°-1300°C. and under pressures of 0.1-200 bar in order to at least partially liberate the copper from the spinel by replacement with the other metal component.

5591414

**SORPTIVE CATALYST FOR THE
SORPTIVE AND OXIDATIVE
CLEANING OF EXHAUST GASES
FROM DIESEL ENGINES**

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The invention relates to a sorption catalytic converter for the combined chemo-sorptive and oxidative cleaning of diesel engine exhaust gases with a high blocking activity for highly volatile

organic exhaust gas components, compounds sorbed on particles, moderately and scarcely volatile organic compounds (SOF), materials with a pungent odor, irritating materials, and ammonia, using an upstream NO_x reducing catalytic converter, with measurable blocking activity for minute high carbon particles, with a high oxidation activity for CO and a restricted oxidation activity for NO and SO₂ with a working range from the ambient temperature to 650°C., comprising a monolithic honeycomb structure having channels adapted for free flow of diesel exhaust gas therethrough of the active mass or of inert carrier material, coated with the active mass, the active mass preferably being composed of V₂O₅/WO₃/MoO₃ mixed oxides borne on sulfatized titanium dioxide, same being doped with platinum metal oxides at a concentration very low in comparison with oxidation catalytic converters, for increasing sorption and oxidation activity. The active mass is employed with 250-1400 g/l coating composition, whereas for oxidation catalytic converters 50-200 g/l of coating composition is typical. The significant inhibition of oxidation activity as compared with SO₂ and NO results from a dilution effect (low level of platinum metal; high active mass) and a possible multi-layer structure with a platinum-free or platinum-depleted covering layer. The enhancement of the sorption and oxidation activity is rendered possible by the employment of covering layers with a high pore volume on a honeycomb structure consisting of an active mass whose pore volume is moderately high for reasons of mechanical strength.

5591691

**METAL FOIL CATALYST MEMBERS
BY AQUEOUS ELECTROPHORETIC
DEPOSITION**

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Flexible metal foil catalyst members suitable for use in catalytic devices for combustion engine emission control are prepared by electrophoretic deposition using an aqueous slurry of catalyst support particles. The deposited support layer is of uniform thickness and stable surface area. The catalyst support may then be impregnated with catalytic species and assembled into a catalytic device. The catalyst members from the invention are especially suitable for use in automotive applications, and more especially in electrically heated catalytic devices.

5597539

CATALYTIC PROCESS

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PCT No. PCT/GB93/02196 Sec. 371 Date Jun. 26, 1995 Sec. 102(e) Date Jun. 26, 1995 PCT Filed Oct. 25, 1993 PCT Pub. No. WO94/11091 PCT Pub. Date May 26, 1994. A process for scrubbing volatile or odoriferous substances from a gas stream with aqueous liquor containing hypochlorite or hydrogen peroxide as an oxidant and recycling part of the resultant liquor after passage through a bed of catalyst for the decomposition of the oxidant is disclosed.

5597771

LAYERED CATALYST COMPOSITE

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The present invention relates to a layered catalyst composite of the type generally referred to as a three-way conversion catalyst having the capability