



**Atmosphere  
Dynamics Corp**

## **SAFETY DATA SHEET**

### **Section 1 - Identification**

**Manufacturer's Name & Address**

Atmosphere Dynamics Corporation  
1107 St Joseph Street  
Shelbyville, Indiana 46176 USA

**Telephone Number**

317.392.6262

**FAX Number**

317.392.1773

**GHS Product Identifier**

**Atmosphere Generator Catalyst**

**Trade Names and Synonyms**

Nickel (NiO) Impregnated Refractory  
Nickel Catalyst Spheres

**Product Numbers**

NCS01 thru NCS03

**Recommended Use**

Catalyst

**Recommended Restrictions**

None known

### **Section 2 - Hazard(s) Identification**

**OSHA/HCS Status:**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

**Health Hazards:**

SPECIFIC TARGET ORGAN TOXICITY – Category 1  
(Repeated Exposure)  
CARCINOGEN – Category 1A  
SENSITIZATION, SKIN / RESPIRATORY – Category 1

**GHS Label Elements:**



**Signal Word:** DANGER

**Hazard Statement:** Health hazards, including cancer, may arise from inhalation of dust generated from handling, ingestion and/or contact with skin and/or eyes

**Prevention:** Do not breathe dust  
Wash thoroughly after handling  
Do not handle until all safety precautions have been read  
Wear respiratory protection

**Response:** If exposed or concerned, get medical advice or attention

**Storage:** No precautions needed

**Disposal:** Dispose of contents in accordance with all local, regional, national, and international regulations

**Hazards not otherwise**

**Classified:** None known

### Section 3 – Composition / Information on Ingredients

**Mixture**

<b><u>Ingredient Name</u></b>	<b><u>CAS Number</u></b>	<b><u>%</u></b>
Aluminum Oxide, $Al_2O_3$	1344-28-1	70-80
Silica, $SiO_2$	7631-86-9	10-20
as Crystalline Quartz	14808-60-7	
as Crystalline Cristobalite	14464-46-1	
Nickel Oxide	1313-99-1	7-9

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

**Section 4 – First Aid Measures**

**Inhalation:** Remove to fresh air. May give oxygen. Consult physician.

**Eye Contact:** Flush eyes with copious amounts of water, at least 15 minutes.

**Skin Contact:** Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention if irritation or inflammation persists.

**Ingestion:** Induce vomiting if conscious. Consult physician.

**Most important symptoms/effects, acute and delayed**

**Over-exposure signs/symptoms:**

**Inhalation:** Inhalation of concentrations above the Occupational Exposure Limits may cause congestion and irritation of the throat, nasal passages and upper respiratory system.

**Eye Contact:** Temporary irritation and inflammation  
Check for and remove any contact lenses  
If irritation persists, seek medical attention

**Skin Contact:** May cause allergic dermatitis (Nickel itch or rash)

**Ingestion:** May cause stomach and intestinal distress

**Indication of immediate medical attention**

**and special treatment needed:** Medical conditions which may be aggravated by exposure include upper respiratory and lung disease such as, but not limited to, bronchitis, emphysema, and asthma.

**Section 5 – Fire-fighting Measures**

**Specific hazards arising from the chemical:** None known

**Hazardous Decomposition:** Decomposition products may include Crystalline Silica. During initial exposure to service temperatures, smoke may be emitted which can cause transitory irritation to the lungs and upper respiratory system. Toxic fumes of nitrogen oxides and metal oxides may be present during decomposition.

Special protective actions for firefighters: Material will not burn  
No special firefighting equipment is necessary

## Section 6 – Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:

No action shall be taken involving any personal risk or without suitable training  
Provide adequate ventilation  
Wear appropriate respirator when ventilation is inadequate  
Put on appropriate personal protective equipment (see section 8)

Methods and materials for containment and cleaning up:

Contain spill. Pick up and place in container for disposal in accordance with Federal, State and Local laws.

## Section 7 – Handling and Storage

Precautions for safe handling: Minimize dust generation. Use appropriate respiratory protection if dust is present above exposure limits. Avoid contact with eyes and skin.

Conditions for safe storage: Store in accordance with local regulations.  
Store in a dry, cool and well ventilated area, away from incompatible materials (see section 10).

## Section 8 – Exposure Controls/Personal Protection

Occupational Exposure Limits:

**US OSHA Permissible Exposure Limit:**

Irritant (Nuisance) Dust:	5.0 mg/m <sup>3</sup>
Crystalline Silica (Respirable):	$\frac{10 \text{ mg/m}^3}{\% \text{SiO}_2 + 2}$
Crystalline Silica (Total Dust):	$\frac{30 \text{ mg/m}^3}{\% \text{SiO}_2 + 2}$
Nickel Oxide:	1.0 mg/m <sup>3</sup>

**US ACGIH Threshold Limit Values:**

Irritant (Nuisance) Dust:	3.0 mg/m <sup>3</sup>
Crystalline Silica:	0.025 mg/m <sup>3</sup>
Nickel Oxide:	0.2 mg/m <sup>3</sup>

**Appropriate Engineering Controls:**

If user operations generate dust, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**Individual Protection Measures:**

<b><u>Respiratory:</u></b>	Wear a NIOSH-approved dust mask to limit exposure. Higher dust levels may require use of a half or full mask respirator with dust filters.
<b><u>Eye/Face:</u></b>	Wear safety glasses with side shields or goggles complying with an approved standard to avoid exposure to dust.
<b><u>Skin:</u></b>	Protective gloves complying with an approved standard should be worn when handling chemical products.

<b>Section 9 – Physical and Chemical Properties</b>
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<b><u>Appearance</u></b>	Gray/Blue Solid Spheres
<b><u>Physical State</u></b>	Solid
<b><u>Color</u></b>	Gray/Blue
<b><u>Odor</u></b>	None
<b><u>Odor Threshold</u></b>	Not Applicable
<b><u>pH</u></b>	Not Applicable
<b><u>Melting Point</u></b>	2900-3400 Deg. F
<b><u>Boiling Point</u></b>	N/A
<b><u>Flash Point</u></b>	None
<b><u>Burning Time</u></b>	Not Applicable
<b><u>Specific Gravity</u></b>	0.9
<b><u>Burning Rate</u></b>	Not Applicable
<b><u>Evaporation Rate</u></b>	0 (butyl acetate = 1)
<b><u>Flammability (solid, gas)</u></b>	Not Applicable
<b><u>Lower Explosive (flammable) Limit</u></b>	Not Available
<b><u>Upper Explosive (flammable) Limit</u></b>	Not Available
<b><u>Vapor Pressure</u></b>	Not Applicable
<b><u>Vapor Density</u></b>	Not Applicable
<b><u>Relative Density</u></b>	Not Available

<u>Solubility</u>	Insoluble
<u>Solubility in Water</u>	Insoluble
<u>Partition Coefficient: n-octanol/water</u>	Not Available
<u>Auto-ignition Temperature</u>	Not Available
<u>Decomposition Temperature</u>	Not Available
<u>SADT</u>	Not Available
<u>Viscosity</u>	Not Available

## Section 10 – Stability and Reactivity

<u>Reactivity:</u>	The product is stable and non-reactive under normal conditions
<u>Chemical Stability:</u>	Stable under normal temperature conditions
<u>Possibility of Hazardous Reactions:</u>	Under normal conditions of storage and use, hazardous reactions or polymerization will not occur
<u>Conditions to Avoid:</u>	Avoid strong acids and ammonium salts. Contact with strong oxidizing agents (such as fluorine, chlorine trifluoride) may present a fire hazard.
<u>Incompatible Materials:</u>	Hydrofluoric acid, fluorine, chlorine trifluoride, oxygen difluoride
<u>Hazardous Decomposition Materials:</u>	Nitrogen oxides and metal oxides may be present during decomposition

## Section 11 – Toxicological Information

### Information on likely routes of exposure

<u>Ingestion:</u>	May irritate and cause stomach pain, vomiting and diarrhea
<u>Inhalation:</u>	May cause allergic respiratory reaction
<u>Skin contact:</u>	May cause an allergic skin reaction
<u>Eye contact:</u>	May irritate eyes

### Information on toxicological effects

*Acute toxicity (list all possible routes of exposure)*

Oral Product: No data available

Dermal Product: No data available

**Inhalation**

**Product:** No data available

**Repeated dose**

**toxicity product:** No data available

**Skin corrosion/**

**irritation**

**product:** May cause skin irritation

**Eye damage/**

**irritation**

**product:** May cause temporary eye irritation

**Respiratory or**

**skin sensitization**

**product:** May cause allergic skin reaction

**Carcinogenicity**

**product:** NTP- In its twelfth annual report on Carcinogens, respirable crystalline silica and nickel oxide were classified as known human carcinogens.

IARC (Volume 68) – There is sufficient evidence in humans for the carcinogenicity of nickel oxide and inhaled crystalline silica in the form of quartz or cristobalite from occupational sources.

OSHA – Crystalline silica and nickel oxide are not regulated as a carcinogens.

**Germ cell mutagenicity**

**In vitro**

**product:** No mutagenic components identified

**In vivo**

**product:** No mutagenic components identified

**Reproductive toxicity**

**product:** No components toxic to reproduction

**Specific target organ**

**toxicity- single exposure**

**product:** None known

Specific target organ  
toxicity- repeated  
exposure product:

None known

Aspiration hazard  
product:

Not classified

Other effects:

Not known

## Section 12 – Ecological Information

Toxicity

Persistence and  
Degradability:

Not available

Bioaccumulative  
Potential:

Not available

Mobility in Soil

Soil/water partition  
coefficient:

Not available

Other adverse  
effects:

Most of the ingredients in this product are naturally occurring minerals, and unless contaminated in service, are not hazardous to the environment

## Section 13 – Disposal Considerations

Disposal Methods:

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.



### Section 14 – Transport Information

<u>US DOT Shipping Name:</u>	Not regulated
<u>DOT Label:</u>	None
<u>UN/NA Number:</u>	None
<u>Canadian TGD Shipping Description:</u>	Not regulated as dangerous goods according to Canadian TDGA
<u>International Dangerous Goods Information:</u>	
<u>IMO:</u>	Not regulated as dangerous goods according to the IMDG Code
<u>ICAO:</u>	Not regulated as dangerous goods according to the IACO Technical Instructions
<u>IATA:</u>	Not regulated as dangerous goods according to the IATA Dangerous Goods Regs

### Section 15 – Regulatory Information

US Federal Regulations

<u>TSCA 8(a) CDR Exempt/Partial exemption:</u>	Not applicable
<u>United States Inventory (TSCA 8b):</u>	This material is listed
<u>CERLA Hazardous Substance List (40 CFR 302.4):</u>	None present in regulated quantities
<u>SARA 302 Extremely Hazardous Substance:</u>	None present in regulated quantities
<u>SARA 304 Emergency Release Notification:</u>	Nickel Oxide
<u>SARA 311/312 Hazardous Chemical:</u>	Nickel Oxide, 500 lbs. TPQ
<u>SARA 313 (TRI Reporting):</u>	Nickel Oxide
<u>Reporting threshold for other users:</u>	10000 lbs.
<u>Reporting threshold for manufacturing and processing:</u>	25000 lbs.

Clean Air Act Section 112

(b) Hazardous Air

Pollutants (HAPs):

Not listed

Clean Water Act Section

311 Hazardous Substances

(40 CFR 117.3):

None present in regulated quantities

Clean Air Act Section 602

Class I Substances:

Not listed

Clean Air Act Section 602

Class II Substances:

Not listed

DEA List I Chemicals

(Precursor Chemicals):

Not listed

DEA List II Chemicals

(Essential Chemicals):

Not listed

**Section 16 – Other Information**

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