

<b>Material Safety Data Sheet</b>
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**Section 1 - Product and Company Identification**

Product Name: Nitrogen/Phosphorus Detector Sample  
Agilent Part Number: G4324A  
Date of Original: 01/26/04  
Manufacturer's Name: Agilent Technologies, Inc.  
500 Ships Landing Way,  
New Castle, DE 19720.  
Number of Pages: 4

USA Emergency Telephone Number: 1-302-633-8777  
USA Information Telephone Number: 1-877-4Agilent  
European Information Telephone Number: (7243) 602-2  
European Emergency Telephone Number: 0049(0) 6151/722440  
When Calling from Outside the USA You May Also Dial Your International Access Code for the USA, then 1, then 302 633 8777

**Section 2 - Composition/Information on Ingredients**

A set of 3x0.5 ml ampoules containing the following in Isooctane  
[540-84-1]: 0.65 ppm of Azobenzene [103-33-3]; 1 ppm Malathion  
[121-75-5]; and 0.1% Octadecane [593-45-3]  
**Chemical Families:** Aliphatic, aromatic and organophosphoric compounds in a branched chain alkane  
**Chemical Synonyms:** Iso-Octane is also known as 2,2,4-Trimethylpentane and Isobutyltrimethylmethane

**Section 3 - Hazards Identification**

Flammable Liquid. Harmful if swallowed, inhaled, or absorbed through the skin

**Section 4 - First-Aid Measures**

**Inhalation:** Vapor or mist is mildly irritating to the mucous membranes. Symptoms of exposure may include dizziness, incoordination, stupor and unconsciousness. If large amounts are inhaled, remove the victim to fresh air. If breathing is difficult give oxygen. If breathing has stopped begin resuscitation measures. Keep the affected person warm and at rest. Contact Physician. **Eye Contact:** Vapor or mist is mildly irritating to the eyes. Contamination of the eyes should be treated by immediate and prolonged irrigation with copious amounts of water by separating the eyelids with fingers. Contact Physician. **Skin Contact:** In case of contact, immediately wash skin with soap and copious amounts of water. Remove and wash contaminated clothing promptly. **Ingestion:** If swallowed, get medical attention immediately.

**Section 5 - Fire-Fighting Measures**

**Extinguishing Media:** Carbon dioxide, dry chemical powder, water spray of standard foam.  
**Special Fire Fighting Procedures:** Wear full protective clothing and self-contained positive pressure breathing apparatus certified by NIOSH when fighting chemically related fires. **Unusual Fire and Explosion Hazards:** Volatile and highly flammable. Vapor may travel a considerable distance to a source of ignition and flash back. Containers may explode in heat of fire. Move containers from fire if safe to do so, otherwise cool with water until well after fire is out.

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**DISCLAIMER:** This Safety Data Sheet is offered without charge to the clients of Agilent. Data is the most current available to Agilent at the time of preparation and is issued as a matter of information only, no warranty as to its accuracy or completeness is expressed or implied.

**Section 6 - Accidental Release Measures**

Shut off all sources of ignition. Use noncombustible absorbent to absorb the spill. Due to the small quantity involved, a leaking ampoule may be placed in a plastic bag containing absorbent and disposed of as hazardous waste according to local regulations. Used absorbent should be disposed of in a similar manner. See Section 15. Personal protective equipment should be worn during remediation of accidental releases according to the nature and quantity of the material involved. See Section 8 for a description of recommended personal protective equipment.

**Section 7 - Handling and Storage**

Do not breathe vapor and avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Store in a cool dry place. Keep away from oxidizing agents. Proper storage must be determined based on other materials stored and their hazards and potential chemical incompatibility. Store in an acceptable protected and secure flammable liquid storage cabinet or room.

**Section 8 - Exposure Controls/Personal Protection**

**Ventilation:** Adequate ventilation is required to protect personnel from exposure to chemical vapors exceeding PEL and to minimize fire hazards. See Section 15 for regulatory standards of exposure. **Respiratory:** Use NIOSH approved respirator equipment or organic mask filter. **Eyes:** Safety glasses are considered minimum protection. Chemical safety goggles or face shield may be necessary depending on quantity of material and conditions of use. Emergency eye wash fountains should be available in the vicinity of any possible exposure. **Skin:** Chemical-resistant protective gloves and clothing are recommended. The choice of protective gloves or clothing must be based on chemical resistance and other user requirements. Generally BUNA-N offers acceptable chemical resistance. Individuals who are acutely and specifically sensitive to this chemical may require additional protective clothing.

**Section 9 - Physical and Chemical Properties**

Flash Point (Method Used): **4.5 °C (Open Cup)**  
Explosion Potential: **LEL(1.1%)/UEL (6.0%)**  
Autoignition Temperature: **418 °C**  
Specific Gravity (H<sub>2</sub>O = 1) **0.692**  
Melting Point (Degree C): **-107**  
Evaporation Rate (n-butyl acetate=1)**ND**  
Boiling Point (Degree C): **99.2 @ 760 mm Hg**  
Vapor Pressure (mm Hg at 21°C): **41**  
Vapor Density (Air =1) **3.93**  
Odor Threshold: **ND**  
Octanol/Water Partition Coefficient: **ND**  
Solubility in Water: Insoluble(x)/Soluble( )  
Appearance and Odor: **Clear, colorless liquid with a gasoline-like odor**

**Section 10 - Stability and Reactivity**

**Stability:** Stable ( x ) / Unstable ( )  
**Conditions to Avoid:** Heat open flame, open containers, and poor ventilation.  
**Incompatibility (Materials to Avoid):** Iso-octane is incompatible with strong oxidizers.  
**Hazardous Decomposition or Byproducts:** Incomplete combustion may generate hydrogen chloride gas and carbon monoxide. **Hazardous Polymerization:** May Occur ( ) / Will Not Occur ( x)

**Section 11 - Toxicological Information**
**Route(s) of Entry:** Inhalation? **Yes** Skin? **Yes** Ingestion? **Yes**
**Iso-octane** may be harmful if swallowed, inhaled or absorbed through the skin.

**Health Hazard Acute/Chronic:** Iso-Octane can cause irritation; narcosis and gastrointestinal tract irritation.

**Carcinogenicity:** NTP? **No**

IARC Monographs? **Azobenzene and Malathion are on Group 3 List (Unclassifiable as to carcinogenicity in humans)**

OSHA Regulated? **No**

OTHER? **No**
**Medical Conditions Generally Aggravated by Exposure:** Preclude from exposure those individuals with diseases of the eyes and skin.

**Section 12 - Ecological Information**
**Persistence/Degradability:** **Iso-octane** is a volatile constituent of petroleum products and natural gas. Although it occurs naturally, it is principally released to the environment via the manufacture, use and disposal of product associated with the petroleum and gas industry. Photolysis and hydrolysis of iso-octane are not expected to be important environmental fate processes in any environmental media. Based upon limited data, biodegradation of the compound may occur slowly in soil and water, but probably only when the compound has been pre-exposed. Volatilization of the compound from water and soil may be the most important fate process. **Biodegradability:** The volatilization 1/2 life of iso-octane for a model river 1 meter deep flowing at 1 m/sec with a wind speed of 3 m/sec has been estimated to be 3.1 hours. The most important fate process for this compound in air may be its reaction with photochemically produced hydroxyl radicals. This reaction has an estimated 1/2 life of 4.4 days. Although iso-octane may undergo slow biodegradation in soil, volatilization from dry and wet soil surfaces is expected to be a more important fate process. **Bioaccumulation:** The estimated bioconcentration factor for iso-octane indicates that bioconcentration may be important in aquatic organisms. Iso-octane is expected to remain strongly adsorbed to soil and sediments.

**Section 13 - Disposal Considerations**

Burn in a chemical incinerator equipped with an afterburner and scrubber. Comply fully with all Federal, State, and local regulations.

**Section 14 - Transport Information**
**DOT Regulations:**
**Shipping Name:** Chemical Kits

**Hazard Class:** 9 UN 3316

**Packing Group:** II

**Label:** Class 9

**Aircraft: Passenger/Cargo:** 10L/pkg.

**RID/ADR:** ND **ADNR:** ND

**IATA-DGR Regulations:**
**Shipping Name:** Chemical Kit

**Hazard Class:** 9 UN 3316

**Packing Group:** II

**Label:** Class 9

**Aircraft: Passenger/Cargo:** 1kg/pkg.

(Y915); 10 kg/pkg. (915)

**Section 15 - Regulatory Information**
**Exposure Limits:**

Chemical Name	CAS Number	OSHA PEL/TWA	ACGIH TLV/TWA	NIOSH TLV/TWA	%Weight/ Weight
Iso-octane	[540-84-1]	Not Established	Not Estab.	Not Estab.	99.90%

**SARA Reporting (Iso-octane)** Section 302:**No** Section 304:**No** Section 313:**No**
**OSHA Labeling Requirements:** Flammable Liquid

**TSCA Inventory List:** All ingredients

**California Proposition 65 List:** Azobenzene

**Section 16 - Other Information**

Unless otherwise noted, the above information pertains only for the solvent and similar

types of components in the sample. When no toxicity data is provided, it is prudent to handle this chemical as hazardous. Furthermore, since individual chemical hypersensitivity cannot be predicted, every chemical should be handled with due respect.

OEL-AUSTRIA: MAK 300 PPM (1400 MG/M3), JAN1999

**European Information**

EC No: 208-759-1

Label: Highly Flammable

Harmful

R 20/22: Harmful by Inhalation and If Swallowed

R 36/37/38: Irritating to Eyes, Respiratory System and Skin

S 16: Keep Away from Sources of Ignition - No Smoking

S 26: In case of contact with Eyes, Rinse Immediately with Plenty of Water and Seek Medical Advice

S 36: Wear suitable Protective Clothing

**KEY TO ABBREVIATIONS**

**ACGIH** - American Conference of Governmental Industrial Hygienists` **CAS** - Chemical Abstract Service **CFR** - Code of Federal Regulations **DOT** - U.S. Department of Transportation 49 Code of Federal Regulations **IARC** - International Agency for Research on Cancer **IATA-DGR** - International Air Transport Association- Dangerous Goods Regulation **LEL** - Lower Explosion Limit **NA** - Not Applicable **ND** - No Data **NIOSH** - National Institute for Occupational Safety and Health **NTP** - National Toxicology Program **OSHA** - Occupational Safety and Health Administration **PEL** - Permissible Exposure Limit **RID/ADR** - Regulations Concerning the International Carriage of Dangerous Goods by Rail/European Agreement Concerning the International Carriage of Dangerous Goods by Road **TLV** - Threshold Limit Value **TWA** - Time Weighted Average **UEL** - Upper Explosion Limit [ ] - Indicates CAS Number