

Material Safety Data Sheet

Section 1 - Chemical Product and Company Identification

MSDS Name: 4R,5R,6S)-4-Nitrobenzyl
3-(diphenoxyphosphoryloxy)-6-((R)-1-hydroxyethyl)-4-methyl-7-oxo-1-azabicyclo[3.2.0]hept-2-ene-2-carboxylate

Synonyms:

Company Identification: PI Chemicals Ltd.
Room 512, Building 1
88 Cailun Road, Zhangjiang Hi-Tech park,
Pudong New Area, Shanghai 201203, China

Telephone Number: 86-21-58953700

Fax Number: 86-21-58953701

Section 2 - Product Information

Catalog Number: PI-10909

CAS Number: 90776-59-3

MDL Number: Not available

EC Number: None

Purity: 98.0%

Section 3 - Physical and Chemical Properties

Physical state: Crystalline powder

Color: White or off-white

Odor: Not available

Molecular Formula: C₂₉H₂₇N₂O₁₀P

Molecular Weight: 594.51

Freezing/Melting Point: Not available

Boiling Point: Not available

Flash Point: Not available

Autoignition Temperature: Not available

Refractive Index (nD20): Not available

Density: Not available

Decomposition Temperature: Not available

Solubility: Not available

Section 4 - Hazards Identification

Eye:	Causes eye irritation.
Skin:	Causes skin irritation. Harmful if absorbed through the skin.
Ingestion:	May cause irritation of the digestive tract. Toxic if swallowed.
Inhalation:	May be harmful if inhaled. Causes respiratory tract irritation.

Section 5 - First Aid Measures

Eye:	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin:	Get medical aid. Flush skin with plenty of water and soap for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops and persists.
Ingestion:	Get medical aid immediately. Wash mouth out with water.
Inhalation:	Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Section 6 - Stability and Reactivity

Chemical Stability:	Stable under normal temperatures and pressures.
Materials to avoid:	Strong oxidizing agents.
Conditions to Avoid:	Incompatible materials.
Hazardous Decomposition Products:	Carbon monoxide, carbon dioxide, nitrogen oxides.
Hazardous Polymerization:	Will not occur.

Section 7 - Handling and Storage

Handling:	Avoid breathing dust, vapor, mist, or gas. Keep container tightly closed. Avoid contact with skin and eyes. Wash thoroughly after handling. Mechanical exhaust required.
Storage:	Store in a cool, dry well ventilated place away from sources of heat and incompatible substances. Keep container tightly closed when not in use. Store at 2-8 deg C

Section 8 - Personal Protection

Eyes:	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin:	Wear appropriate protective gloves to prevent skin exposure.
Clothing:	Wear appropriate protective clothing to prevent skin exposure.
Respirators:	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Fire and Explosion Hazard Data

General Information:	As in any fire, wear a self-contained breathing apparatus, MSHA/NIOSH
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(approved or equivalent) and protective clothing to prevent contact with skin and eyes.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Section 10 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container.

Section 11 - Toxicological Information

RTECS#: CAS#90776-59-3: Not available

LD50/LC50: RTECS: Not available.

Carcinogenicity: 4R,5R,6S)-4-Nitrobenzyl
3-(diphenoxyphosphoryloxy)-6-((R)-1-hydroxyethyl)-4-methyl-7-oxo-1-azabicyclo[3.2.0]hept-2-ene-2-carboxylate - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Section 12 - Environmental information

Not available

Section 13 - Disposal Consideration

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state and local environmental regulations.

Section 14 - Transport Information

IATA: This substance is considered to be non-hazardous for transport.

IMO: This substance is considered to be non-hazardous for transport.

RID/ADR: This substance is considered to be non-hazardous for transport.

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: Xi

Indication of Danger: Irritant

Risk Phrases:

R 22: Harmful if swallowed.

Safety Phrases:

S 24/25: Avoid contact with skin and eyes.

S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

WGK (Water Danger/Protection)

CAS#90776-59-3: 3

Canada

CAS#90776-59-3: Not available

US Federal

TSCA

CAS# 90776-59-3 is not listed on the TSCA Inventory. It is for research and development use only.

Section 16 - Additional Information

MSDS Creation Date: March 25, 2006

Update: February 20, 2008

The above information is believed to be accurate and represents the best knowledge available to us currently. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall PI Chemicals, be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, even if PI Chemicals has been advised of the possibility of such damages.

Note: For R&D use only.