

# A drug type - N-4(HYDROXYPHENYL) PHTHALAMIDE

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**Abstract:** Trafficking being a hipe state these days is followed by a lot of people and lot are being grabbed into the drug trafficking and are being affected by it. Drugs producing a state of well being grab adductors towards them. Such a compound is N-4(Hydroxyphenyl) Phthalamide, though being used for treatments but is also a drug that is not encountered but found in collaborate on that may lead to an adverse effect on body and may be an addictor.

**Keywords:** N-4(Hydroxyphenyl) Phthalamide, drug

## 1. INTRODUCTION:

A drug is any substance other than food, that when inhaled, injected, smoked, consumed, absorbed via a patch on the skin or dissolved under the tongue causes a physiological change in the body. Psychoactive drugs are chemical substances that affect the function of the central nervous system, altering perception, mood or consciousness. They include alcohol a depressant, the stimulants nicotine and caffeine, Heroin as an analgesic, cough suppressant, antidiarrhoeal. All of these drugs are abused as recreational drug for their euphoric effects. These are the most widely abused psychoactive drugs worldwide and are also considered as recreational drugs since they are used for pleasure rather than medicinal purposes. Other recreational drugs include hallucinogens, opiates and amphetamines and some of these are also used in spiritual or religious settings. Some drugs can cause addiction and all drugs can have side effects. Excessive use of stimulants can promote stimulant psychosis. Many recreational drugs are illicit and international treaties such as the Single Convention on Narcotic Drugs exist for the purpose of their prohibition. Depending on their effects these drugs are classified into various classes like stimulants, depressants, hallucinogens, narcotics and designer drugs. Opium alkaloids being the principal derivative of opium eg Morphine and other opium alkaloids are derived from the main juice that is being obtained from unripe seed pods of the *Papaver somniferum* (Poppy). Trafficking of such compounds on large scale becomes difficult and costlier for the traffickers. Increased need and demand indulge the traffickers into a task of mixing it with such compounds that gives same effect as it gives and also make it to be bulkier in form. One of the compounds such found in the mixtures is N-4(Hydroxyphenyl) Phthalamide. It is used to make synthetic indigo and phthalocyanine pigments which have macrocyclic structure showing striking coloring features like porphyrins (biopigments). Phthalamide has isoindole moiety. Indole structure is a motif in nature. N-alkylated phthalimides, made from potassium phthalimide, are used for the synthesis of primary amines (Gabriel synthesis) by the hydrolysis reaction.(9) Phthalimides are used for the preparing of synthetic indigo, pesticides, pigments, dyes, pharmaceuticals, and fungicides. N-Hydroxyethyl Phthalamide is used as an intermediate in medicine, pharmacy, dyes and pesticides.

## 2. PURPOSE:

N-Hydroxyphthalimide is a compound that is formed by an oxidation reaction and is also derived from urea. Similarly heroin being one of the drug when used in combination with N-Hydroxyphthalimide the effect on the body increases and also helps the abusers to have a feeling of well being. But when like other drugs it is taken in large quantity and has a negative effect on body. When subjected to Gc-ms give this structure and details (11)

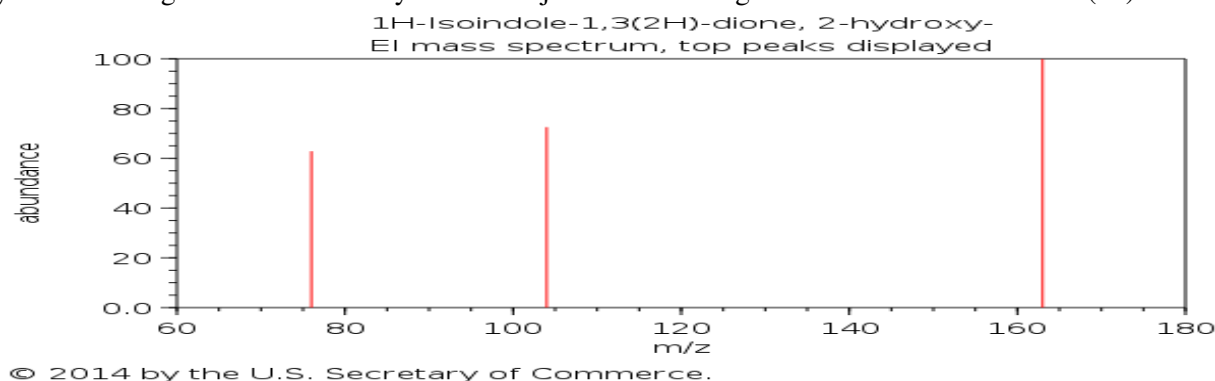


Fig. 1. Spectral graph of N-4(Hydroxyphenyl) Phthalamide

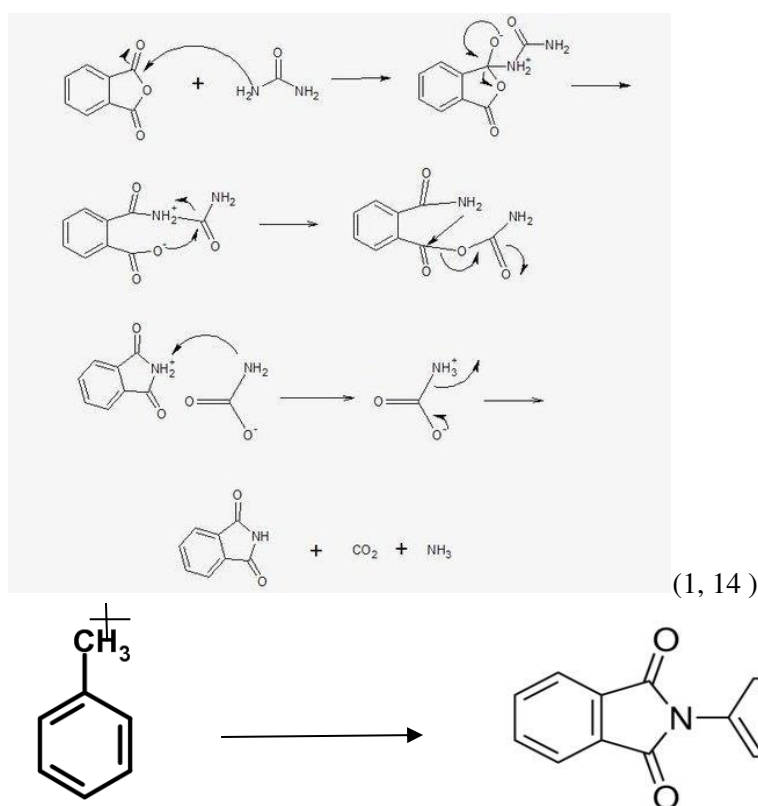
NIST Number	229320
Library	Main library
Total Peaks	96
m/z Top Peak	163
m/z 2nd Highest	104
m/z 3rd Highest	76

### 3. N-4(HYDROXYPHENYL) PHTHALAMIDE:

It is a compound with the chemical formula  $C_{14}H_9NO_3$  and its molecular weight is 239.22616 g/mol. (10, 11)

**Synthesis of N-4(Hydroxyphenyl) Phthalamide:** It is the compound synthesized by organic reaction between phthalic anhydride and p-aminophenol in presence of acetone at 28 degree Celsius and PTSA, 110 degree Celsius for 9 hours in presence of toluene. (11)

CAS Number: 7154-85-0



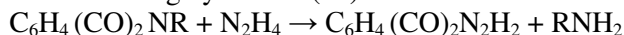
**Fig. 2. N-4(Hydroxyphenyl) Phthalamide**

**Physical properties of N-4(Hydroxyphenyl) Phthalamide:** It is white or off-white colored organic compound.

**Chemical properties of N-4(Hydroxyphenyl) Phthalamide:** It is an imide derivative of phthalic anhydride with ammonium hydroxide, is used in the synthesis of primary amines and amino acids. Imide refers to any compound which contains the divalent radical " $-C(=O)NHC(=O)-$ " they are derived from ammonia or primary amine, where two hydrogen atoms are replaced by a bivalent acid group or two monovalent acid groups, resulting in consisting of two carboxylic acid groups (or one dicarboxylic acid). It is a compound derived from an acid anhydride by replacing the oxygen with the  $=NH$  group. Imides are monomers to prepare polyimides that contain repeating imide groups. (6)

**Uses of N-4(Hydroxyphenyl) Phthalamide:** Frequently, the term of imide refers to the combined forms such as maleimides, phthalimides, and succinimides which are used as plastic modifiers to improve heat-resistant, antioxidant and antifoulant properties.(3) They are used as intermediates for the synthesis of cross-linking agents, pesticides, dyes, antiseptics and crystalline adducting agents. They are also useful compounds in the synthesis of primary amines and amino acids for the application in the field of medicine and biological research. It is used to make synthetic indigo and phthalocyanine pigments which have macrocyclic structure showing striking coloring features like porphyrins (biopigments). Phthalimide has isoindole moiety (a part or functional group of a molecule).(7) N-Hydroxyethyl

Phthalimide is used as an intermediate in medicine, pharmacy, dyes and pesticides. The compound N-Hydroxy Phthalamide is highly soluble in water sometimes slightly soluble and is used as a precursor to anthranilic acid, a precursor to azo dyes and saccharin. Alkyl phthalimides are useful precursors to amines in chemical synthesis, especially in peptide synthesis where they are used "to block both hydrogens and avoid racemization of the substrates". The amine is commonly liberated using hydrazine (13)



These drug receptors help in knowing the beneficial properties of the drug and so as to know whether the drug receptor interactions are fundamental for understanding the drug or not where N-(4Hydroxyphenyl) Phthalamide is also one of the drug which when taken in higher amount has an adverse effect on the body but it is the drug formed when anhydride and urea react in the presence of heat. N-(4Hydroxyphenyl) Phthalamide having Hydroxyphenyl group similar to that of paracetamol and acetaminophen because of this type it is also showing similar toxicity to the PCM and acetaminophen i.e., low blood sugar, low blood pH, easy bleeding, hepatic encephalopathy at the end leading to hypotoxicity and ultimately death of the individual. This hypo toxicity is not because of the chemical itself but is because of its one of the metabolites. The drugs that are sold are always sold in group form so to increase its effect on body and reduce the adverse effect. Being a non NDPS substance it is very easy to be abused and sold illegally and is also being used as over the counter drug. Properties of N-(4-Hydroxyphenyl) Phthalamide are as same as that of various drugs such as opium derivatives, amphetamines, caffeine resulting in a state of well being and relief from pain. It is available in white crystalline powder form same as that of opium derivatives thus mixing is so accurate to that of N-(4-Hydroxyphenyl) Phthalamide that no difference could be made. Mixture of the compounds gives a good color tests for Marquis, Mecke and Frohde, though being it a mixture it should have given a different color test thus this property makes us confuse for saying that the sample is only of Opium derivatives. N-(4-Hydroxyphenyl) Phthalamide though being an irritant is not used in large quantity, quantity is limited to the extent that it should counter balance the effects of other compounds used in the mixture to that of opium derivatives so that the effect of opium derivatives is enhanced not reduced.

#### 4. POSITIVE EFFECTS:

1. N-Hydroxyphthalimide (NHPI), an important chemical raw material which was found to have potent and selective anti-proliferative effect on human breast carcinoma BT-20 cells, human colon adenocarcinoma LoVo and HT-29 cells during our screening for anticancer compounds and is a displayed antitumor activity resulting in promising anticancer agent for human breast carcinoma and human colon adenocarcinoma selective treatment.
2. Phthalimides are used for the preparing of synthetic indigo, pesticides, pigments, dyes, pharmaceuticals, and fungicides

#### 5. NEGATIVE EFFECTS:

It causes skin irritation, serious eye irritation, respiratory irritation, Specific target organ toxicity, intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.(15)

#### 6. PERSONAL PROTECTION:

1. Wear a self-contained breathing apparatus, rubber boots and gloves and disposable coveralls. Dispose of coveralls after use. Remove from ignition sources if safe to do so. Follow emergency response plan and contact proper authorities if needed. Keep unprotected persons away. Environmental Protection: Keep spills out of sewers and bodies of water. Dike and contain the spill with inert material. Absorb on sand, vermiculite or diatomite. Transfer material to a container for disposal or recovery. Ventilate area and wash spill site after material pickup is complete.

#### 7. TOXICITY:

Effects of its toxicity is not known till now but is an important chemical raw material which was found to have potent and selective anti-proliferative effect on human breast carcinoma BT-20 cells, human colon adenocarcinoma LoVo and HT-29 cells during our screening for anticancer compounds and is a displayed antitumor activity (2) resulting in promising anticancer agent for human breast carcinoma and human colon adenocarcinoma selective treatment i.e. cancer killing medicines worldwide Eg. Tamoxifen.

#### 8. POTENTIAL FOR ABUSE:

It has anticonvulsant activity on body, being a type of mood stabilizer it can be used as a stimulant.

**9. SUPPLIERS OF THIS COMPOUND:**

Pfaltz & Bauer, Inc. , Thermo fisher (Kandel) ,Pub Chem

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