



# Benzene

**CHEMISTRY'S FIRST AROMATIC  
BLOCKCHAIN ATOM ECONOMY**

**A WHITE PAPER**

**By The Benzene Team,  
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## 2. DEDICATION

Dr. Jacob Bigeleisen, an American physical chemist, studied the transformation of crude oil into chemicals. He made significant contributions to understanding the chemistry of petroleum and its products. Unfortunately, he died of acute leukemia in 2010.



The BNZ project is dedicated to the memory and legacy of Dr. Jacob Bigeleisen. The man who greatly contributed to the chemistry of petroleum and its products.

Dr. Jacob Bigeleisen, an American physical chemist, meticulously studied the transformation of crude oil into chemicals. His ingenious work on the kinetic isotope effect has inspired generations of scientists and researchers, and also this project.

Unfortunately, Dr. Bigeleisen passed away due to leukemia in 2010. By dedicating the BNZ project to him, we honor Dr. Bigeleisen's contribution in the field of Chemistry.



### 3. DEDICATION

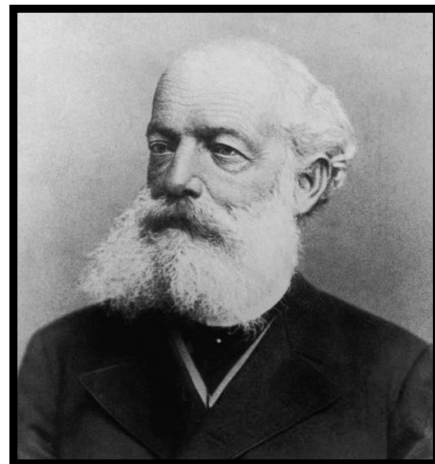
Dr. Friedrich August Kekulé was a visionary chemist, lauded for his profound and intensive contributions to the field of chemistry.

Kekulé's insights and theories proposed the ring structure of benzene, revealing the true nature of aromatic compounds.

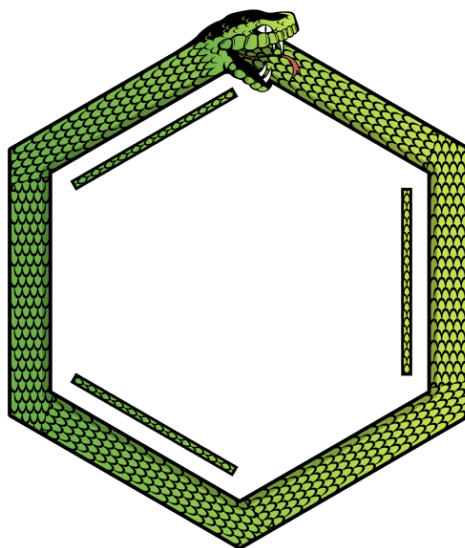
To appreciate the history of Benzene, Kekulé described while a lecturer in Ghent University of Belgium, through a daytime dream a snake eating its own tail or an Ouroboros.

He was a genius who understood molecular structures and emphasized the significance of valence and the bonding capabilities of carbon atoms.

Besides his contributions as a chemist, Kekulé also was a highly influential academician and mentor who shaped the future of many others. To him, we dedicate this project.



#### OUROBOROS – A DEDICATION TO KEKULÉ



## 4. EXECUTIVE SUMMARY

BNZ is chemistry's first aromatic blockchain atom economy. It is an ERC-20 token that connects aromatics and cryptocurrencies. The token is a peer-to-peer aromatic for chemists, pharmacologists and pharmacists and anyone else in the chemistry field, who despite being an integral part of the industry, do not grow at par with it.

Purchasing BNZ allows you to buy our artwork "Ouroboros" on our website, which can be found listed on our NFT shop. This in turn supports our educational initiative aimed at educating people about the base chemical used in many pharmaceutical and non-pharmaceutical products. Benzene can be the first step to understanding the history of volatile organic compounds and its importance in modern day society.

BNZ also aims to further research on the sustainable development of benzene, one of the top twenty base chemicals used by the pharmaceutical, textile, and other industries.

By promoting transparency especially in the pharmaceutical sector, it aims to overcome the private pharma companies which benefit from high prices for health insurances in medication. When you buy from a pharmacy the majority of health insurance revenue go straight to pharmaceutical companies however pharmaceutical employees gain less: BNZ replaces cost ineffective health insurance companies whether government based or private with a or peer-to-peer technology. Therefore, removing large corporation middlemen.

BNZ aims to bridge the disparity between professionals like chemists and pharmacists to you and acts as an educational tool. BNZ's distributed profits will go to charities who impart education to the youth eager to learn. "Ouroboros" in alchemical traditions refers to the constant battle between creation and destruction in the pursuit of knowledge and wisdom.



The knowledge you gain from understanding organic chemistry and purchasing the artwork “Ouroboros” helps us research to improve benzene production from crude oil feed and to improve benzene’s atom economy.

Benzene is a base chemical used by several sectors and is one of the top 20 most sought-after base chemicals, so any successful patent in this area is bound to generate high revenues. BNZ dedicates 100% of its patent proceeds to organizations that educate and raise awareness about benzene, aiming to minimize its risks while also leveraging its industrial benefits.

Benzene is produced naturally through volcanoes and forest fires but the extraction and logistical costs make it cost-intensive, and therefore it is produced industrially through a crude oil fragment naphtha.

The BNZ protocol has no sign up, which ensures decentralization known by the team as delocalization. Also, it has a deflationary model and redistributes 100% of profits from the patents to charity for educating the youth about organic chemistry and its importance.

The protocol charges a percentage of tokens as a transaction fee, which increases with the size of the purchase and redistributes those tokens to BNZ Holders.

Benzene is an aromatic and one of the 20 most sought-after base chemicals. It is available naturally, but due to high extraction and logistical costs, it is not preferred.

For over a century, industrial benzene has been produced from naphtha through the Oil to Chemicals (O2C) method. This involves the distillation of crude oil, which creates fractions based on boiling points, one of which is naphtha — a crucial feedstock for producing aromatic hydrocarbons like toluene and benzene.

It is estimated that by 2029, the crude oil demand would peak and there would be a need for output optimization. The R&D BNZ aims to carry out in this area could also generate high revenues through patents. Currently, in the O2C method, the challenge is the development of catalysts that can withstand high boiling points and impurities like metals, nitrogen, and sulfur. BNZ aims to research in these areas and more to bring out patented solutions.



## 5. INTRODUCTION



**BNZ is an ERC-20 token that aims to raise funds to research Oil to chemicals to improve the atom economy of benzene which 100% of profits will be donated to achieve better educational standards.**



Benzene (BNZ) is an ERC-20 token that bridges the gap between chemistry and cryptocurrencies. This blockchain project is specifically structured on the lines of a delocalized ring in chemistry, which interconnects without confining it to a single point of control.

The token acts as a medium of exchange, a peer-to-peer token or peer-to-peer aromatic from chemists, pharmacologists and pharmacists and anyone else in the chemistry field. It creates a microeconomy in which stakeholders thrive.

It is designed on the lines of Benzene's chemical structure to create an ecosystem through which stakeholders support a common goal and thrive, while still being independent. Also, it has a powerful protocol that keeps it decentralized through a deflationary model.

Later in this white paper, we shall elaborately discuss the ingenious architecture of BNZ, which makes it chemistry's first aromatic blockchain atom economy — a hyper distributed and interconnected blockchain network designed to ensure transaction security and integrity, while also ensuring efficient resource management.

The token is designed with an intelligent deflationary model where a certain number of tokens are taken out of circulation on each buy, and redistributed to the community, thereby potentially increasing its value. However, there is no promise of profits from other people's work.

This is like atom economy, which when at 100%, makes a product less valuable due to efficient low-cost production. For instance, transitioning to the production of Nylon 6. It is considered to be more efficient as crucial ingredients, namely Caprolactam, are used efficiently.

This maximizes resource utilization and minimizes waste — also referred to as atom economy, a green chemistry concept. Likewise, BNZ's deflationary token could appreciate in value through reduction in circulating supply. However, no guarantee is made to anyone.





Through a well-planned protocol, the BNZ is designed to remain truly decentralized. It would be free from the downsides of even the most popular cryptocurrencies like Bitcoin, 40% of which was held by 1000 wallets (Bloomberg, 2017).

As this centralizes holding, it makes decentralization a distant dream and BNZ overcomes this inherent risk at the very threshold, while also achieving its primary goal — a robust atom economy.

As a result, BNZ becomes an ideal choice even for those who want to truly embrace decentralization. The token aims to create a sense of community among the stakeholders, who are typically pharmacists and chemists. The project recognizes the numerous chemist's efforts and creates a community for aromatics.

#### THE IMPACT

By purchasing BNZ, you get to purchase our artwork called “Ouroboros” on our website, which in turn supports your education on our website, which is primarily dedicated to understanding organic chemistry and our goal is to pioneer discussions around advancing the sustainable development of this crucial chemical.

While BNZ's primary focus is on educating organic chemistry, the project is also determined to tap into the potential of this base chemical, which is crucial for pharmaceutical, textile, and several other industries.


Speaking of pharmaceutical companies, these companies benefit from high prices for health insurances in medication. When you buy from a pharmacy the majority of health insurance revenue go straight to pharmaceutical companies however pharmaceutical employees earn less: BNZ replaces cost ineffective health insurance companies whether government based or private with a peer-to-peer technology, so there are no middlemen.

Overall, the BNZ project creates “Chemistry's First Aromatic Blockchain Atom Economy” that fosters growth and is free from potential centralization through its inherent architecture. By creating a peer-to-peer exchange token and an ecosystem that advances research and development, BNZ has its goals clearly laid out.



## 6. WHAT IS BNZ?

BNZ is a peer-to-peer aromatic from chemists, pharmacologists and pharmacists and anyone else in the chemistry field. BNZs main aims is to provide education to the masses and to become a resource to appreciate the history of Benzene, which Kekulé described through a dream originally as a snake eating its own tail or an Ouroboros.




**BNZ is a peer-to-peer aromatic from chemists, pharmacologists and pharmacists and anyone else in the chemistry field to you. Particularly, those who are uneducated who are looking for an unconventional education**

While pharmacists and chemists keep their knowledge within universities BNZ aims to be an outreach program to encourage educational learning and is a tool to bring the average person up to speed with organic chemistry. To change the status quo, we introduce Benzene.

The community-centric approach aims to promote scientific research and discussion around the atom economy and provide a growth avenue for the stakeholders in the long run and build more use cases for the crypto to increase adoption and for education to be improved for all.

It has a cleverly designed protocol that overcomes the downsides of even the Bitcoin protocol and truly embraces decentralization. BNZ has no signup or counterparty risk and we shall discuss this more elaborately in the protocol section.

This blockchain project is specifically structured on the lines of a delocalized ring in chemistry, which interconnects without confining it to a single point of control.



We also use the phrase "Atom Economy" to demonstrate efficiency and sustainability, indicating that BNZ aims to promote efficiency by focusing on reducing waste and optimizing resource usage through research and development.



## 7. THE PROTOCOL

The BNZ is a trustless protocol that entirely functions through smart contracts with no manual intervention. To facilitate this, the Ethereum blockchain was chosen because it is the most credible chain with smart contract functionality, unlike its predecessor, Bitcoin. Since it is an ERC-20 token, it can be stored on compatible private wallets by the stakeholders.

The BNZ protocol has the following features:

### 7.1. TRUSTLESS OPERATIONS

The BNZ protocol is entirely automated using smart contract code which is available publicly and can be verified. There is full transparency, with absolutely no room for centralization.

### 7.2. DEFLATIONARY MODEL WITH REWARDS

Akin to the atom economy in Nylon and Kevlar, Nylon has a higher atom economy and so the wastage and price to the consumer or number of BNZ goes down, wherein lots of atoms decrease Nylon's value.

In comparison, Kevlar has a lower atom economy and so the wastage and price to the consumer or number of BNZ goes up, wherein fewer atoms increase Kevlar's value.

With that said BNZ token's price could increase over time. That's because the protocol is designed with a deflationary model which means, over time, instead of decreasing in value due to oversupply, the BNZ tokens could increase in value due to shrinking circulation and redistribution in the form of rewards. However, price is based off supply and demand, so, do not read this as a guarantee.

### 7.3. NO SIGN UP

Although decentralization has been the core idea behind cryptocurrencies, it has to a large extent been centralized by the exchanges which require KYC and other formalities, but BNZ overcomes that at the very threshold by eliminating the need to sign up with an exchange as the BNZ token can be purchased straight from the website.



**BNZ is a trustless protocol, with no sign up. It has a deflationary model and redistributes 100% of profits from the patents to charities who improve educational standards of especially the youth.**



#### 7.4. ANTI-WHALE

The BNZ protocol is anti-whale because it encourages smaller investments through a cleverly programmed protocol that charges a transaction fee on the purchases based on its size, which we shall discuss in detail in the tokenomics section.

This 'fee' deducted from the tokens purchased is then removed from circulation and redistributed to the community. While it rewards the community, it also encourages small investors. Also, there is a security feature to prevent wallets from amassing huge quantities in order to protect the ecosystem from flash loan attacks and the organized pump and dumps.

#### 7.5. PROTOCOL DESIGN

The BNZ protocol is designed to encourage small buyers to invest more, and this is achieved through volume-linked transaction fee collected from the buyer.

As shown in the table below, the transaction fee is a percentage of the tokens purchased (atom economy) and the tokens wasted are then redistributed and burnt.

TOKENS PURCHASED	TOKENS RECEIVED	TOKENS WASTED OR REDISTRIBUTED & BURNT
Less than 1 million	100%	0%
1 to 10 million	99%	1%
10 to 100 million	98%	2%
100 million to 1 billion	97%	3%
1 to 10 billion	96%	4%
10 billion to 78,110,000,000	95%	5%

The protocol along with the tokenomics ensures absolute decentralization while also benefiting the community.



## 8. TOKENOMICS

Let us now discuss the BNZ token's economics to understand how this token ensures equitable and fair distribution, while also keeping the platform decentralized.

### TOTAL SUPPLY:

The total supply of BNZ was 78.11 billion and this hard cap was to ensure limited supply, which hedges against inflation.

### TRANSPARENCY AND GOVERNANCE:

BNZ is 100% decentralized and the protocol is embedded into a smart contract for trustless operations. To keep it decentralized and healthy, the BNZ team hold 5.5% of the total supply, 4% for marketing and 1.5% for research.

### DEFLATIONARY MODEL:

BNZ has a deflationary model embedded into its protocol and as we have already discussed, a percentage of the tokens bought is burnt to the community thereby limiting inflation.

### REDISTRIBUTION MECHANISM:

The tokens wasted during a purchase are mostly (90%) redistributed to the community, again through a smart contract, which ensures there is no centralizing of resources or misappropriation as is the case when a project creates multiple internal wallets for founders.

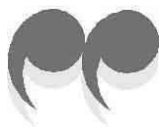
### REVENUE SHARING:

BNZ is a utility token meant to support research and development of professional chemists and therefore, chemists will work on our project to find a more atom efficient benzene through O2C or Oil-To-Chemicals, moreover, 100% of the profits from the patents created would be given to charity to improve education to the wider community. Furthermore, the shrinking supply could also increase BNZ's value and thereby benefit the community. However, BNZ does not make any promise of profit from other people's work and price is based on supply and demand.



## 9. WHAT IS BENZENE

The BNZ project revolves around benzene, making it essential to discuss this base chemical's composition and manufacturing process. This provides a clearer picture of the potential for research in this area.



**Benzene is an aromatic and one of the 20 most sought-after base chemicals. It is available naturally, but due to high extraction and logistical costs, it is not preferred.**



### A WORD ABOUT BENZENE

Benzene's chemical formula is  $C_6H_6$  and it comes from naphtha, one of the fractions derived from crude oil refining. Benzene is one of the aromatics that can be produced using naphtha and is a base chemical used by many sectors, which are elaborately discussed in the market potential section.

Benzene is called an aromatic because of its chemical structure. As all the carbon atoms lie in the same plane, allowing effective overlapping of p-orbitals. Its carbon atoms tend to form a ring and have alternating single and double bonds.

The electrons in these bonds are however fragmented or delocalized over the ring, and not fixed, which results in a conjugated  $\pi$ -electron system. It thereby follows a specific rule (Hückel's rule) for stability with 6  $\pi$ -electrons and has equal bond lengths.

It is primarily an organic chemical compound that evaporates quickly, besides being highly flammable. Although mostly colorless, sometimes benzene can have a light yellowish hue. Commercially, benzene is one of the top 20 industrial chemicals. We shall now discuss how it is produced and the challenges in doing so.

### Natural Benzene

Benzene is naturally produced due to volcanoes and forest fires, however, extracting benzene from natural sources is cost intensive. Besides the extraction cost, the logistical inconvenience also makes it impractical.

For example, a forest fire could occur in a remote location while the manufacturing facilities are several thousand miles away. Therefore, businesses prefer to rely on industrially produced benzene.





**Benzene is produced from naphtha, which is produced during the crude refining process.**

**As crude oil demand is projected to peak in 2029, R&D to optimize output essential.**



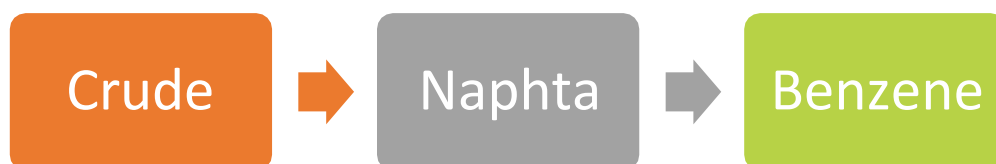
## Industrially Produced Benzene

Industrial benzene, like most other base chemicals such as ethylene and propylene, is produced through a refinery process known as the Oil to Chemicals (O2C) method.

For almost a century, industrial benzene has been produced in this manner. It begins with the distillation process wherein the crude oil is heated. This process separates crude into various fractions based on boiling points.

One of these fractions is naphtha, which is a key feedstock used in the production of aromatic hydrocarbons like toluene and benzene and that is where the problem lies.

Crude oil demand is rising each day and is expected to peak by 2029, increasing the need for highly productive chemical extraction processes that can optimize the output (BBC, 2023).



In the O2C method, the biggest roadblock is the formulation of catalysts that can efficiently tolerate the feed's high boiling point and continue to do so throughout large-scale production. An improved efficiency of a catalyst in turn improves the atom economy of Oil to Chemicals process.

This can be marred if impurities are present in the feed, such as metals, nitrogen, sulfur, etc... To overcome this, extensive research is required and BNZ aims to do that and create patented products and/or processes.

Through some chemist's intensive research, we figured out that the zeolitic components of the catalyst degradation can be checked through formulation. An improved efficiency of a catalyst in turn improves the atom economy of the oil to chemicals process.



Also, it was observed that the metal deposition leads to a slight reduction in activity and induces certain changes in selectivity patterns. These alterations are thoroughly examined through extensive characterization.

However, with growing concerns about environmental awareness and the expanding markets for eco-friendly engines (electric, hybrid, or hydrogen-powered), there is a consensus that the fuel market will decline over time.

The UK and several other European nations have already implemented public electric vehicles, to achieve their zero-emission goals (The UK Government, 2024).

While the crude requirements may experience decline in that direction, the chemical market still has potential and BNZ aims to tap into it through benzene. As stated earlier, 100% of all profits from patents will be given to charity.





## 10. CONCLUSION

BNZ is a blockchain initiative that is structured closely on the principles of a delocalized ring in chemistry, interconnecting without confining control to a single point. This ingenious project bridges the worlds of chemistry and blockchain technology by introducing BNZ, an innovative ERC-20 token.

BNZ operates on a peer-to-peer model, with absolutely no sign-ups required, thereby eliminating middlemen and associated risks such as price manipulation. This design ensures better user control over assets, preventing losses to scams. BNZ's decentralized approach, together with its deflationary model, position it as a futuristic solution in the evolving landscape of blockchain and chemistry.

The initiative's commitment to research and development in Oil to Chemicals (O2C) processes aims to optimize benzene production from crude oil, by focusing on improving atom economy and developing resilient catalysts. These advancements can significantly enhance production efficiency and reduce costs. A primary goal of BNZ is to develop a reusable catalyst within the reactions of crude oil to chemicals, promoting sustainability in crude oil manufacturing.

At this juncture, it is crucial to clarify that BNZ is a utility and can be used to purchase our artwork named Ouroboros on our NFT shop. The project aims to educate crypto users about organic chemistry. Education is a cornerstone of BNZ's mission. Despite the wealth of knowledge in the chemistry field, it often remains inaccessible to the average individual. BNZ addresses this issue by donating 100% of profits from successful patents to improve educational standards.

In essence, BNZ serves as an educational tool, enhancing knowledge in both the chemistry and cryptocurrency communities. By empowering individuals with education and innovative solutions, BNZ is paving the way for a more informed and sustainable future.



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