



COVALENCE

A MOLECULE BUILDING GAME

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AGE

8+

Time

20-40

PLAYERS

2-4+

OBJECTIVE

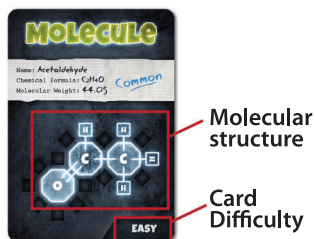
In **Covalence**, players work together to accurately construct a number of secret organic molecules. One player takes on the role of the *Knower*, and has knowledge of the secret molecules. The other players are the *Builders*; they must deduce what the secret molecules are, based upon clues given to them by the Knower. The Knower and all Builders are on the same team, and they have a limited number of clues and guesses. They must cooperatively utilize the limited resources to construct their molecules before the guesses run out!

COMPONENTS

25 SECRET MOLECULE CARDS

These show your Knower the molecules that your Builders must construct.

- 10 **Easy** molecule cards
- 7 **Medium** molecule cards
- 8 **Hard** molecule cards



21 ELEMENT TILES

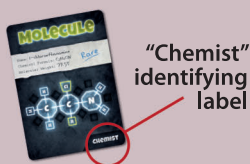
9 Carbon, 6 Oxygen, and 6 Nitrogen. Note that the front and back side of a tile are different.



CHEMIST EXPANSION COMPONENTS

Unless you are playing with the Chemist expansion, you don't need these; see the **Chemist Expansion** section for details!

27 CHEMIST SECRET MOLECULE CARDS



2 CHLORINE ORGANIC CLUE CARDS



3 CHLORINE TILES



27 CLUE CARDS

These are the hints that your Knower will give, to help your Builders.

- 11 **Number Clue** cards
- 16 **Organic Clue** cards

Number Clue Cards



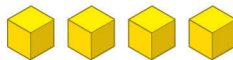
Organic Clue Cards



21 HYDROGEN TILES



8 CLUE TOKENS












7 GUESS TOKENS



GAME SETUP




KNOWER AND BUILDER SETUP

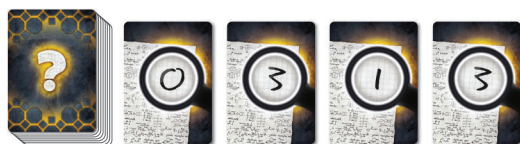
1. Decide which player will be the **Knower**.
The remaining player(s) will be the **Builder(s)**.
2. Give **each Builder** three Carbon tiles, two Nitrogen tiles, two Oxygen tiles, and seven Hydrogen tiles.

3 2 2 7
3. Decide together what difficulty level your game will be, and make stockpiles of Clue  and Guess  tokens in the middle of the playing area according to the table below:

No. of Builders	Easy		Medium		Hard	
						
1	6	6	5	5	4	4
2	7	6	6	5	5	4
3	8	7	7	6	6	5

Players may team up to form a Builder team, rather than playing as an individual Builder if they wish. Treat each Builder team as a single Builder.

CARD SETUP

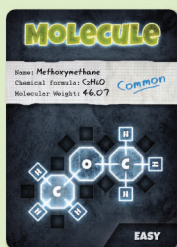
4. Separate the **Secret Molecule** cards, the **Number Clue** cards, and the **Organic Clue** cards into their own decks.
  
5. Shuffle the **Number Clue** cards and set them face down as a deck in front of the Knower. Draw the top four cards and place them face up to the right of the Number Clue deck.



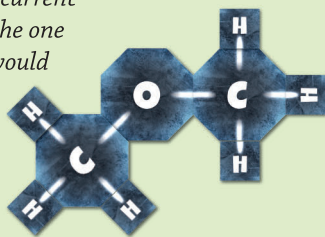
GAMEPLAY

COVALENCE EXPLAINED IN ONE PARAGRAPH

The Knower will provide the Builders with clues (*by giving combinations of Clue cards to individual Builders*) which will give them hints about their current Secret Molecule card. The Builders will assemble their Element tiles on the table in front of them, trying to match their own current Secret Molecule, and will spend Clue tokens to get further hints from the Knower. When the Builders think they're ready, they can spend a Guess token to check if their constructed molecules are correct. If the Builders can correctly construct all of their molecules before they run out of guesses, the team wins!



For example, if a Builder's current Secret Molecule card was the one shown here, that Builder would have to use clues given by the Knower to assemble his or her tiles into the configuration shown!



GETTING STARTED

To begin the game, the Knower peeks at the top Secret Molecule card from the pile in front of each Builder. These top cards are the *current* Secret Molecules which the respective Builder(s) must construct. **The Knower may freely peek at these top cards whenever he or she wants, but the Builders may never do so.**

All molecules include exactly 3 octagonal Element tiles connected in a specific order by Single or Double Bonds, and anywhere from 2 to 7 square Hydrogen tiles attached to the remaining “open” Bonds of the octagons. See **Molecule Card Difficulty** on the back page for details.

THE FIRST FREE CLUES

The Knower then gives **one** *clue* to **each** of the Builders. The Builders will use clues to help them arrange their Element tiles into a configuration that matches their current Secret Molecule. The Builders may **not** begin constructing their Secret Molecule until **after** this first free clue is given. All clues must follow the **Rules for Giving a Clue**:

RULES FOR GIVING A CLUE

- Only the 8 face up Clue cards are available for selection.
- The Knower may select **zero or one** of the available **Organic Clue** cards.
- In **addition** to the Organic Clue card, the Knower may select **as many of the four available Number Clue cards as desired**.

All selected cards together are known as the *clue*, and are placed in front of the relevant Builder along with any previous clues.

The Knower may **not** communicate with the Builders in **any** way (*verbal, visual, hand gestures or facial expressions*) other than by the giving of Clue cards.

The Knower may **not** use the Clue cards to point at or otherwise indicate a particular Element tile.

Once a particular clue has been fully given, replenish the array from the appropriate decks so that there are always 4 Number Clue and 4 Organic Clue cards available for the next clue's selection. (*If the Clue cards of either type ever run out, shuffle that type's discards to form a new deck.*)

Want some hints on how to be creative with giving clues? Check the back page for hints and tactics!

Once all Builders have been given their free clues, the game settles into its normal process; using existing clues as a guide, the Builders should each assemble their Element tiles into a molecule that they think will match their own current Secret Molecule. Builders may rearrange or flip over their tiles as much as they want until they are satisfied with their molecule.

When all Builders are ready, they should as a group decide if they want **Further Clues**, or if they want to try **Making a Guess**.

FURTHER CLUES

When the Builders all agree that they are ready for another clue, they exhaust one **Clue token** (*discarding it to the game box*), which notifies the Knower that they are ready for another clue. The Knower must then select **one** Builder and give that Builder a clue, following the **Rules for Giving a Clue**.



*If the Builders run out of Clue tokens, they will be unable to get further clues from the Knower... this doesn't mean they have lost the game, but they **will** be forced to make guesses without getting any new hints.*

If the Knower thinks that **none** of the available Clue cards are useful to the Builders, the Knower may discard **any number** of the available Clue cards and then replace them with new cards from the respective decks so that the correct amount are available.

- This replacement is **instead** of giving a clue. Builders would need to agree to exhaust an additional Clue token to be given a clue from the newly available Clue cards.
- Clue cards when discarded should be discarded face up into separate Number Clue and Organic Clue piles.

As before, once the clue has been given, Builders may rearrange their tiles however they want, and then make the choice between Further Clues or Making a Guess.

MAKING A GUESS


When the Builders believe that the molecules they have constructed match the molecules on their Secret Molecule cards, the Builders may agree to exhaust one **Guess token** (*removing it from the game*). This notifies the Knower that they are officially making a guess.



The Knower compares each Builder's molecule to the relevant current Secret Molecule card, without revealing the card.

If a molecule **does not** match the Secret Molecule card, the Knower does nothing; that Builder will have to continue working on this Secret Molecule when the game continues.

For **each built** molecule that **does** match the current Secret Molecule card the following steps are taken:

- The Knower reveals the Secret Molecule card so that everyone can see. The Builder gets to keep it face up as a reminder that this molecule has already been built. (*No two Secret Molecules are alike, so this is a bit of extra information going forward.*)
 - One Clue token is returned from the game box to the stockpile. (*The amount of clue tokens in the stockpile may never exceed the starting amount given according to the table in Setup.*) 
 - The Builder's Clue cards are discarded into their separate Number/Organic discard piles.
 - If a Builder still has any cards in their face down stack, the Knower peeks at the top card of the stack, gives that Builder one Free Clue, and the game continues with the Builder now working on the new current Secret Molecule.
 - If the Builder has no more Secret Molecule cards to build, but other Builder(s) still have cards, that Builder should assist other Builders in building their molecules until the game is won or lost.
-

WINNING AND LOSING

WINNING

If no Builder has any face down Secret Molecule cards left
(because they have built them all)
the team has **won** the game!

LOSING

If any Builder still has any face down Secret Molecules to build,
but there are **no Guess tokens left**, the team has **lost** the game!

THE CHEMIST EXPANSION



The **Chemist Expansion** is a variant of Covalence for experienced players that adds a new Chlorine element to the mix, making deduction even harder than before!

SETUP CHANGES

During Step 2 of Setup,
Give each Builder one
Chlorine tile in addition to
their other Element tiles.



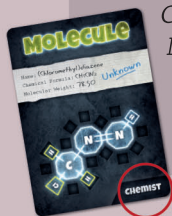
Instead of Step 3 of Setup, make stockpiles
of Clue and Guess tokens in the middle of the
play area according to this table:

No. of Builders	Chemist	
		
1	6	6
2	7	6
3	8	7

Prior to Step 6 of
Setup, shuffle the two
Chlorine Clue cards into
the Organic Clue deck.



Instead of Step 7 of Setup, shuffle
all 27 Chemist Secret Molecule
cards into all the Easy, Medium and
Hard cards from the base game,
totaling 52 Secret Molecule cards.



Note the “Chemist” label
in the bottom corner of the
Chemist Secret
Molecule cards, so
that you can
easily separate
them later.

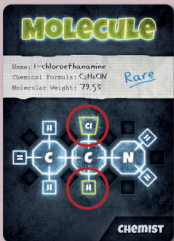
GAMEPLAY CHANGES

When playing the Chemist Expansion you follow all of the same rules as in normal play. The only differences are that you are using an additional set of Secret Molecule cards, your Builders have an extra tile (*Chlorine*) that they must incorporate into their arrangements, and there is a new type of Organic Clue card (*Chlorine*) in play.

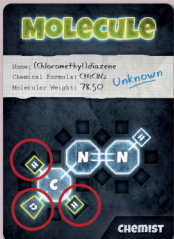
As with all of the Secret Molecule cards from the base game, the Chemist Secret Molecules are composed of exactly 3 octagonal Element tiles and anywhere from 2 to 7 square Hydrogen tiles. Additionally, all Chemist Secret Molecules share these attributes:

- 1. There is exactly one Chlorine in the molecule.**
- 2. The Chlorine will always be bonded to a Carbon.**
- 3. Each Carbon has at least one Hydrogen bonded to it.**

On many of the Chemist Secret Molecule cards the Chlorine tile can be correctly bonded in one of several positions. If this is the case, the Hydrogen and Chlorine tiles will share a similar yellow highlight around the tile, showing the different positions where the Chlorine can correctly bond. With the Chlorine in any one of these highlighted positions, all other highlighted positions should simply be bonded to Hydrogens.



For example, in this molecule, the Chlorine could bond in either of the highlighted positions around the central Carbon tile (circled in red here), and the other highlighted position should be a Hydrogen.



In this molecule, the Chlorine could bond to any one of the three highlighted positions around the Carbon tile (circled in red here), while the other two positions should be Hydrogens.

MOLECULE CARD DIFFICULTY

Easy Molecule cards (10 cards total)

- CCC, CCO, or CCN in some order.
- Between 4 and 7 Hydrogens.
- Zero or one Double Bond.

Medium Molecule cards (7 cards total)

- COO, CNN, or CON in some order.
- Some number of Hydrogens.
- Single Bonds only.

Hard Molecule cards (8 cards total)

- The same components as Medium, except will contain exactly **one** Double Bond.

PLAYER DISTRIBUTION

2 Player Game

One Knower and one Builder. Four Secret Molecule cards are dealt out to that Builder.

3 Player Game

One Knower and two Builders, each of whom build their own molecules. Each Builder gets three Secret Molecule cards.

4 Player Game

One Knower and three Builders, each of whom build their own molecules. Each Builder gets three Secret Molecule cards.

5 or More Player Game

One Knower and up to three teams of Builders as needed. Each un-teamed Builder or Builder team gets three Secret Molecule cards and builds their own molecules.

GAMEPLAY HINTS

Clue cards can be given to the Builders in any fashion the Knower wishes (*except for pointing at specific Element tiles*). Clue cards might be laid face down, overlapped with others in any way, paired with other previous clues, or otherwise placed or angled to suggest hints.

Before asking for a clue or making a guess, all Builders should be sure to have complete molecules assembled in front of them. This will help the Knower give the most helpful and relevant hints.

Remember that you are a team! Builders should discuss amongst each other the meaning of certain clues and help each other.

A CLOSER LOOK AT SOME PARTICULAR ORGANIC HINTS



Stereochemistry

This refers to the spatial arrangement of atoms that form the structure of molecules. As such, this clue could mean that the elements are correct but that they are not in the right order.



Single or Double Bonds

Playing a Single or Double Bond card could be hinting at many different things. For example a Double Bond card could mean that you need to add, remove, or change the position of a Double Bond. Pairing with Number cards is a good way to be more specific.

The interpretation of a clue depends on the circumstances. Get creative and think about which clues are **not** being given in addition to the ones that **are** being given! Good luck!



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GAME DEVELOPMENT
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