**README: Weighted Scoring Model for DEA SSL Chemicals**

**Objective**

This scoring model uses data from sanctions, government subsidies, and complicity indicators to assess and rank chemicals based on risk factors. The goal is to produce a weighted score for each chemical that reflects its relative importance based on these risk factors.

**Step 1: Define Risk Parameters**

We will assess each chemical based on three primary parameters:

1. **Sanctions and Indictments (S)**
2. **Government Subsidies (G)**
3. **Complicity Indicators (C)**

Each parameter is scored independently, with sub-factors that allow for more precise scoring based on specific types of sanctions, subsidies, and indicators of complicity.

**Step 2: Assign Sub-Scores for Each Parameter**

Each parameter has its own set of sub-factors. Assign point values based on the presence and significance of each sub-factor as follows:

**1. Sanctions and Indictments (S):**

* **Attempted Distribution of Synthetic Opioids**: +10 points
* **Precursor Chemical Distribution**: +15 points
* **Specific Opioid Importation Attempts (e.g., Protonitazene)**: +12 points
* **Bitcoin Wallet Associations (e.g., for money laundering)**: +8 points
* **Money Laundering Involvement**: +5 points

**Total Score for S**: Sum of all applicable points for each sub-factor.

**2. Government Subsidies (G):**

* **Existence of Subsidies Supporting Production**: +10 points
* **Promotion of Export Industries for Chemicals**: +8 points
* **Lack of Enforcement Support Funding**: +5 points

**Total Score for G**: Sum of all applicable points for each sub-factor.

**3. Complicity Indicators (C):**

* **Weak Regulatory Framework**: +15 points
* **Minimal Enforcement Actions**: +10 points
* **Failure to Uphold International Agreements**: +12 points
* **Evidence of Cooperation with Traffickers**: +20 points
* **Favorable Market Access for Chemical Producers**: +8 points

**Total Score for C**: Sum of all applicable points for each sub-factor.

**Step 3: Assign Weights to Each Parameter**

The importance of each parameter (S, G, C). Higher weights indicate a more significant impact on the final score.

Define weights for each parameter:

* **Sanctions and Indictments Weight (w1)**: Suggested default = 1.2
* **Government Subsidies Weight (w2)**: Suggested default = 1.1
* **Complicity Indicators Weight (w3)**: Suggested default = 1.3

These weights can be adjusted depending on priority. For instance, if sanctions are more critical, you might increase w1w1w1 to 1.5.

**Step 4: Calculate the Weighted Score**

Using the assigned sub-scores and weights, calculate the total weighted score with the following formula:

Total Score=(S×w1)+(G×w2)+(C×w3)\text{Total Score} = (S \times w1) + (G \times w2) + (C \times w3)Total Score=(S×w1)+(G×w2)+(C×w3)

Where:

* **S** = Total score from Sanctions and Indictments
* **G** = Total score from Government Subsidies
* **C** = Total score from Complicity Indicators
* **w1, w2, w3** = Weights for each parameter

**Example Calculation**

If a chemical has the following sub-scores:

* **Sanctions (S)**: 30 points (e.g., precursor chemical involvement, Bitcoin wallet associations)
* **Government Subsidies (G)**: 20 points (e.g., existence of production subsidies, lack of enforcement funding)
* **Complicity Indicators (C)**: 25 points (e.g., weak regulatory framework, favorable market access)

The weights are set as:

* **w1** = 1.2
* **w2** = 1.1
* **w3** = 1.3

Then, calculate the Total Score as follows:

Total Score=(30×1.2)+(20×1.1)+(25×1.3)\text{Total Score} = (30 \times 1.2) + (20 \times 1.1) + (25 \times 1.3)Total Score=(30×1.2)+(20×1.1)+(25×1.3) Total Score=36+22+32.5=90.5\text{Total Score} = 36 + 22 + 32.5 = 90.5Total Score=36+22+32.5=90.5

**Step 5: Rank Chemicals by Total Score**

Once you have the total scores for each chemical, rank them in descending order. Higher scores indicate a higher priority or risk associated with the chemical based on the parameters.

**Summary Table**

| **Parameter** | **Sub-Factor** | **Points** |
| --- | --- | --- |
| **Sanctions (S)** | Distribution of Synthetic Opioids | +10 |
|  | Precursor Chemical Distribution | +15 |
|  | Specific Opioid Importation Attempts | +12 |
|  | Bitcoin Wallet Associations | +8 |
|  | Money Laundering Involvement | +5 |
| **Government Subsidies (G)** | Production Subsidies | +10 |
|  | Export Industry Promotion | +8 |
|  | Lack of Enforcement Funding | +5 |
| **Complicity Indicators (C)** | Weak Regulatory Framework | +15 |
|  | Minimal Enforcement Actions | +10 |
|  | International Agreement Failures | +12 |
|  | Cooperation with Traffickers | +20 |
|  | Favorable Market Access | +8 |

**Adjusting and Testing**

After defining the weights and calculating initial scores, test the model with known cases to ensure it accurately reflects priority levels. Adjust weights as necessary based on observed results and evolving insights.