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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Identification** | | | | | | | | | | | | | | | | |
| **Name:** | | **Notebook reference:** | | | | | | | | **Date:** | | | | | | |
| **Reaction description** Please describe the reaction (or provide a reaction scheme) | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | |
| **Previous experience** If the **exact** same reaction on the **same or larger scale** has been approved, this reaction is also. If an incident has happened previously, consider it in a new risk analysis. | | | | | | | | | | | | | | | | |
| **Experience:**  I have done this **exact** reaction before Notebook reference:  **Scale:**  **Same / smaller**  **larger**  **Risks:** Are the risks the same? Yes  No | | | | | | | | | | | | | | | | |
| **Chemical Products** Identify the chemical products, their risks, and risk levels for all products used in the reaction | | | | | | | | | | | | | | | | |
| **Product No.**  **3**  **4**  **5** | **Product Name** | | **Quantity**  **(g, mg, kg, ml, L)** | **Possible Risks** | | | | | | | | | | **Risk level  (0-5)** | | **Have manipulated the product before** |
| **Toxic** | **Corrosive** | **Flammable** | **Oxidizer** | **Explosive** | **Enviro. Haz.** | | **Comp. Gas** | **Other:\_\_\_\_\_\_\_\_\_\_\_­** | |
| **1.** |  | |  |  |  |  |  |  |  | |  |  | |  | |  |
| **2.** |  | |  |  |  |  |  |  |  | |  |  | |  | |  |
| **3.** |  | |  |  |  |  |  |  |  | |  |  | |  | |  |
| **4.** |  | |  |  |  |  |  |  |  | |  |  | |  | |  |
| **5.** |  | |  |  |  |  |  |  |  | |  |  | |  | |  |
| **6.** |  | |  |  |  |  |  |  |  | |  |  | |  | |  |
| **7.** |  | |  |  |  |  |  |  |  | |  |  | |  | |  |
| **8.** |  | |  |  |  |  |  |  |  | |  |  | |  | |  |
| **9.** |  | |  |  |  |  |  |  |  | |  |  | |  | |  |
| **10.** |  | |  |  |  |  |  |  |  | |  |  | |  | |  |
| **11.** |  | |  |  |  |  |  |  |  | |  |  | |  | |  |
| **12.** |  | |  |  |  |  |  |  |  | |  |  | |  | |  |
| **13.** |  | |  |  |  |  |  |  |  | |  |  | |  | |  |
| **14.** |  | |  |  |  |  |  |  |  | |  |  | |  | |  |
| **15.** |  | |  |  |  |  |  |  |  | |  |  | |  | |  |
| **Minimum risk levels**:  + 2,  + 1,  + 1,  + 2,  (b.p < 60°C) + 2,  (b.p > 60°C) + 1,  + 1,  + 5,  + 1,  + 1. **Other** (Highly Reactive, Pyrophoric, Carcinogen, etc.) = Risk +1 | | | | | | | | | | | | | | | | |
| **Total** (Max = No. of products x 5) Note: Products with No Risk are not counted in the Max value | | | | | | | | | | | | |  | | **/** | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Reaction Conditions** | | | | | | | | | | | | | | | | |
| **Thermal Conditions** | | | | | | | | | | | | | | | **Risk level (0-5)** | |
| **Room Temperature** 20°C (Risk + 0)  **Heating** (Risk +1)  20 to 60°C (Risk + 2) 60 to 100°C (Risk + 3)  100 to 150°C (Risk + 4) 150 to 200°C and more (Risk + 5)  **Cooling** (Risk + 1)  20 to - 15°C (Risk + 2) -15 to -50°C (Risk + 3)  -50 to -100°C (Risk + 4) -100 to -150°C and more (Risk + 5)  **Note:** Dangers of the solvent used for the cooling bath must be indicated in the Chemical Products | | | | | | | | | | | | | | |  | |
| **Atmospheric Conditions** | | | | | | | | | | | | | | | **Risk level (0-5)** | |
| **Air / open flask** (Risk + 0)  **Gas at 1atm** (Risk + 1)  1 to 2 atm (Risk + 2) 2 to 5 atm (Risk + 3)  Ar / N2  5 to 7 atm (Risk + 4) 10 atm and more (Risk + 5)   Other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Note:** Dangers of this gas must be indicated in the Chemical Products  **Low vacuum**  (Risk level + 1)  **High vacuum** (Risk level + 3) | | | | | | | | | | | | | | |  | |
| **Quench** | | | | | | | | | | | | | | | **Risk level (0-2)** | |
| **Do you need to quench your reaction?** Yes (Risk + 1) No  If yes, is your quench exothermic? Yes (Risk +1) No | | | | | | | | | | | | | | |  | |
| **Total** (Max = 0, 5 or 10 ) | | | | | | | | | | | | | | |  | **/** |
| **Risk Evaluation** | | | | | | | | | | | | | | |  |  |
| **Total Risk Level** (risk levels exceeding 50% must be approved by supervisor) | | | | | | | | | | | | | | |  | **/** |
| **Personal Protection Equipment Required** | | | | | | | | | | | | | | | | |
|  | C:\Users\Adam\AppData\Local\Microsoft\Windows\INetCache\Content.Word\lab coat.png |  | C:\Users\Adam\AppData\Local\Microsoft\Windows\INetCache\Content.Word\Safety glasses.gif |  | C:\Users\Adam\AppData\Local\Microsoft\Windows\INetCache\Content.Word\gloves.jpeg | Nitrile | |  | C:\Users\Adam\AppData\Local\Microsoft\Windows\INetCache\Content.Word\face-shield-symbol.jpg |  | C:\Users\Adam\AppData\Local\Microsoft\Windows\INetCache\Content.Word\mask.png |  | C:\Users\Adam\AppData\Local\Microsoft\Windows\INetCache\Content.Word\gas mask.jpg |  | | |
|  |  |  | Rubber | |  |  |  | Other : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
|  |  |  | Latex | |  |  |  |  | | |
| **Anticipated Work-up and Purification** | | | | | | | | | | | | | | | | |
| **Work-up Methods**  Water / brine wash Drying Agent \_\_\_\_\_\_\_\_\_\_\_  Acid / base wash Concentration \_\_\_\_\_\_\_\_\_\_ Drying Agent \_\_\_\_\_\_\_\_\_\_\_  Filtration  Gravity  Suction  Evaporation  Other Specify: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | | | | | | | | |
| **I have read the Standard Operating Procedure for all of the checked work-up methods?** Yes  No | | | | | | | | | | | | | | | | |
| **Purification Methods**  Column chromatography  Gravity  Under pressure  Recrystallization  Distillation  Simple  Reduced pressure  Sublimation  Simple  Reduced pressure  Other Specify: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | | | | | | | | |
| **I have read the Standard Operating Procedure for all of the checked purification methods?** Yes  No | | | | | | | | | | | | | | | | |
| **Additional Comments (from the experimenter)** | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | |
| **Approval (if necessary)** | | | | | | | | | | | | | | | | |
| **Approval Options** | | | | | | | Risk levels are well controlled, the reaction can be completed.  Risk levels are elevated, recommend completing full risk analysis.  Risk levels are too high, this reaction cannot be done. | | | | | | | | | |
| **Additional Comments (from the supervisor)** | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | |
| **Supervisor’s signature:** | | | | | | |  | | | | | | | | | |