

# List of Core Reactions

HAMARI CHEMICALS LTD.

## Alkylation

**Base** KOH, NaOH, Li, MeONa or EtONa, *tert*-BuOK, *tert*-BuONa, NaH, Alkyl lithium (*n*-BuLi), Lithium Amide (e.g. LDA, made *in situ*)

### Electrophilic Reagent

Alkyl Halide (Cl, Br, I), Me<sub>2</sub>SO<sub>4</sub>, Et<sub>2</sub>SO<sub>4</sub>)

## Cryogenic Reaction

SST (-50 to -90°C) GL > -45°C

## Diazotization

NaNO<sub>2</sub>, *etc.*

## Darzens Condensation

## Etherification

CuBr-catalysis (Ullmann Reaction)  
Phase Transfer Catalyst (TBAB *etc.*)

## Friedel-Crafts Reaction

Alkylation, Acylation and Cyclization

## Grignard Reaction

MeMgBr, PhMgBr, *etc.*

## Halogenation

## Horner-Emmons Reaction

## Homogeneous Asymmetric Hydrogenation

Ru, Rh, Ir catalysts

## Indole Synthesis

## Mannich Reaction

## Michael Reaction

## Mitsunobu Reaction

## Negishi Cross Coupling

## Nitration

HNO<sub>3</sub>/H<sub>2</sub>SO<sub>4</sub>, HNO<sub>3</sub>/AcOH,  
HNO<sub>3</sub>/NaNO<sub>2</sub>

## Optical Resolution

## Oxidation

MnO<sub>2</sub>, KMnO<sub>4</sub>, OXONE®, CAN  
Swern and related oxidations, TEMPO

## Peptides

### 1. Small to medium length peptides

Using solution phase synthesis

### 2. Protected Amino Acid Derivatives

Cbz-, Boc-, Fmoc-, *etc.*

### 3. Chiral Building Blocks

Pro-NH<sub>2</sub>, Pro-OMe·HCl, Prolinol, *etc.*

## Reduction

SBH, LAH, Red-Al, Zn/AcOH,  
NaBH(OAc)<sub>3</sub>, DIBAH (-40°C)

### Catalytic Hydrogenation

Pd-C,

#### Autoclaves

Pt-C,

(SST) max. 990psi (6.8MPa)

PtO<sub>2</sub>,

(Hastelloy) max. 140psi (0.96MPa)

Rh-Al<sub>2</sub>O<sub>3</sub>,

Raney Ni

Asymmetric Schiff Base Reduction with  
**Raney Nickel**

## Sandmeyer Reaction

## Suzuki Coupling

## Wittig Reaction