



## Cu Ni Co Extractants

We special to focus on R&D metal extraction reagents, our major products as below:

1. [P204 \(D2EHPA or HDEHP\)](#) extractant. This is used for first step to remove impurity for laterite nickel ore.
2. [DY319](#) high efficiency nickel cobalt co-extraction extractant for battery recycle, can take out nickel and cobalt together from Lithium battery electrolyte.
3. [DY272](#) Nickel cobalt separation extractant, it can take cobalt out from nickel cobalt solution, then leave pure nickel.
4. [DY988N/DY973N/DY902/DY5640](#) copper solvent extraction reagent.
5. [P507](#) non-ferrous metal extractant for copper, zinc, cobalt-nickel, cadmium, gold-silver, platinum group metals, rare earths and so on.
6. [DY377](#) efficient nickel and diamond separation extractant.
7. [DY366](#) Scandium extractant.
8. [DY316](#) Lithium extractant.

Our R & D team always follow the market needs, not only developed nickel extractants in laterite Nickel ore, Rare earth extractants, Lithium extractants, Vanadium extractants, Beryllium extractants, Rare precious metals (Platinum Iridium Osmium Ruthenium, Palladium and Rhodium) extractants, but also work on Nuclear spent fuel extractants and related extractants in the field of waste battery recycling, always keep on the forefront of industry development.



### Our Copper Solvent Extraction Reagent laboratory test result



## Specification and Performances:

Item	DY88	DY988N	DY973N	DY902
Appearance	Brown oil liquid	Brown oil liquid	Brown oil liquid	Amber oil liquid
Density (25°C)	0.91-0.93	0.91-0.93	0.91-0.93	0.95-0.97
Flash temperature	≥62°C (PMCC)	≥62°C (PMCC)	≥62°C (PMCC)	≥62°C (PMCC)
Solubility of copper-carried organic (25°C)	≥30 g/L Cu	≥30 g/L Cu	≥30 g/L Cu	≥30 g/L Cu
Copper saturation capacity 10% (V/V)	4.8-5.1 g/L Cu	5.1-5.4 g/L Cu	5.4-5.7 g/L Cu	5.6-6.2 g/L Cu
Extraction kinetics	≥90% (60s)	≥95% (30s)	≥95% (30s)	≥95% (30s)
Extraction isothermal point (Organic)	≥3.8 g/L Cu	≥4.4 g/L Cu	≥4.7 g/L Cu	≥4.7 g/L Cu
Extraction isothermal point (Aqueous)	≤2.2 g/L Cu	≤1.6 g/L Cu	≤1.3 g/L Cu	≤1.3 g/L Cu
Phase Stripping time of extraction	≤70s	≤70s	≤70s	≤60s
Stripping kinetics	≥96% (30s)	≥95% (30s)	≥95% (30s)	≥95% (15s)
Stripping isothermal point (Organic)	≤0.6 g/L Cu	≤1.7 g/L Cu	≤2.0 g/L Cu	≤2.3 g/L Cu
Stripping isothermal point (Aqueous)	≥33.2 g/L Cu	≥32.7 g/L Cu	≥32.7 g/L Cu	≥32.4 g/L Cu
Stripping Phase time	≤80s	≤80s	≤80s	≤60s
Copper Net Transfer	3.2 g/L Cu	2.7 g/L Cu	2.7 g/L Cu	2.4 g/L Cu
Cu/Fe selectivity	≥2000	≥2000	≥2300	≥2500

**Compound copper extraction reagent of Ketoxime and Aldoxime can be used alone or mixed with LIX984N, LIX973N, M5640, M5774, CP-150 and N902 in any ratio.**

***You can free to add our reagent to your using reagent in any ratio.***

In practice, to produce one ton cathode copper, the consumption of Aldoxime will more than 10kg, but Compound Aldoxime & Ketoxime (DY988N) will less than 3kg. We have copper leaching plant in Zambia, the consumption of DY988N is 2 kg to produce one ton copper cathode. The purity of copper cathode can near 99.999%.



Type	Se	Te	Bi	Cr	Mn	Sb	Cd	As	P	Pb
	%	%	%	%	%	%	%	%	%	%
< x >	< 0.00004	< 0.00010	< 0.00003	< 0.00004	0.00003	< 0.00001	< 0.00001	< 0.00003	0.00030	0.00026

  

Type	S	Sn	Ni	Fe	Si	Zn	Co	Ag	Cu
	%	%	%	%	%	%	%	%	%
< x >	0.00023	0.00037	0.00003	0.00020	< 0.00003	< 0.00003	0.00007	< 0.00001	99.9982

## Laboratory test process:

- Dilute copper extraction reagent: Base the  $\text{Cu}^+$  content of PLS (Lixivium liquid), add suitable No.260 solvent oil to dilute the organic. Such as the content of copper is 5 g/L, if we use DZ988N, the copper net transfer is 2.7 g/L, 0.27 g/100ml,  $5/0.27=18.5$ , so the organic should be dilute to 19%. (Laboratory test usually use 100 ml).
- Pour the prepared organic phase to PLS: according to the volume rate of 1:1, and fully mix it over 3 minutes, then record the time to stand the phase till it is separated, you will know the phase separation time. Then pour out the inorganic solution.
- Pour 180g/L  $\text{H}_2\text{SO}_4$  to the left organic phase in rate of 2:1-4:1 (V:V), and mix it 3 minutes, then record the back extraction time, we will get pure  $\text{CuSO}_4$ . The reverse extracted organic phase can be used again.

If the calculated concentration more than 20%, please change the phase ratio of organic phase to aqueous phase=2:1.

Please click here to view the operation video: <https://www.youtube.com/watch?v=-mQ8iWH1LUo>

## How to make sure our reagent is workable in your plant:

Do above laboratory separately to compare the extraction ability, phase separation time and situation with your using reagent; Take your using organic phase, mix with our organic (V/V, 1:1), then do above laboratory test to check the extraction ability, phase separation situation, and confirm whether it has untoward effect. If above tests all be normal, it means that both reagents can be mixed to use together.

**Please refer these processes to do others laboratory test.**





# Zhengzhou Deyuan Fine Chemicals Co.,ltd







# ISO 9001

## The Certificate Of Quality Management System

Certificate No. : 04923Q00332R0M

**Zhengzhou Deyuan Fine Chemicals Co., Ltd.**

Address: Wangcun Town, Xingyang City, Zhengzhou City, Henan Province, P.R. China  
Unified Social Credit Code: 914101827374254092

According to your organization's application, our company carried out audit and certification in accordance with the requirements for *Quality Management System* (GB/T19001-2016/ISO9001:2015), it accords with the requirements through assessment. The scope of the certified QMS is:

**Synthesis, purification, and packaging of copper extractant, nickel-cobalt extractor, and 260 # solvent oil (excluding hazardous chemicals)**

*Initial date: 2023-03-27*

*New issued date: 2023-04-19*

*Term of validity of this certificate: 2023-03-27 to 2026-03-26*

The scope of the certified should limits within the administrative licensing or China Compulsory Certification. The certified organization shall be subject to annual supervision of CTC during the validity period. The Certificate is only valid with the annual surveillance labels. The certificate related information can be obtained through the national certification and accreditation Information public service platform (<http://cx.cnca.cn>) or customer service hotline 400-888-2538.

The first  
surveillance

The second  
surveillance



中国认可  
国际互认  
管理体系  
MANAGEMENT SYSTEM  
CNAS C049-M



*Lang sui Ping*  
Chairman

**Guangdong Quality Testing CTC Certification Co., Ltd.**



Address: No. 10, Science Avenue, Huangpu District, Guangzhou,  
Guangdong, China

Tel.: 86-020-89232333 Fax: 86-020-89232078 Web: [www.qtctc.org](http://www.qtctc.org)

