

SYMBOLES DE GÉNIE CHIMIQUE

BACCALAURÉAT

Chimie de laboratoire et de procédés industriels

BREVET DE TECHNICIEN SUPÉRIEUR

Chimiste

Classification des appareils


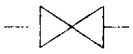
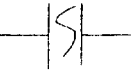
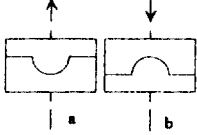
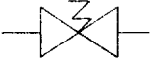
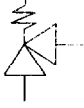

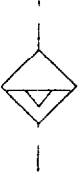

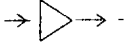

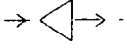
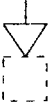




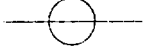


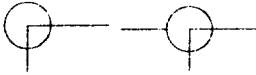



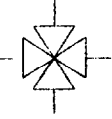
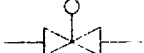
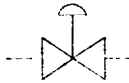


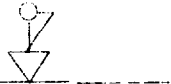
Repère	Type	Appareils
A	AGITATEUR	Agitateurs de tous types pour homogénéiser des phases liquides
B	BROYEUR	Concasseurs Broyeurs Pulvérisateurs
C	COMPRESSEUR	Compresseurs Ventilateurs Pompes à vide ...
D	COLONNE TOUR	Colonnes et tours - Rectification - Extraction - Lavage - Absorption
E	ECHANGEUR	- Bouilleurs - Évaporateurs - Économiseurs - Surchauffeurs ... - Réfrigérant - Condenseurs - Aéroréfrigérant ...
F	FOUR	Fours de fusion, grillage, cuisson Hauts fourneaux Sécheur
M	MELANGEUR	Agitateurs de tous types pour homogénéiser des phases semi-fluides et solides
P	POMPE	Pompe de tous types
R	RESERVOIR RECIPIENT	Bac Réservoirs Ballons Gazomètres Silos Trémies ...
S	SEPARATEUR FILTRE	Crible Décanteurs Filtres Essoreuses Dépoussiéreur Centrifugeuses ...
T	TRANSPORTEUR	Transporteurs Convoyeurs Élévateurs Portiques Grues ...
V	CHAUDIÈRE A VAPEUR	Chaudières à vapeur Chaudières à fluide caloporteur Fours tubulaires

Tuyauteries

Nom	Norme 1976	Norme 1995
Tuyauteries de tous types		
Croisement de tuyauteries (sans raccordement)		
Croisement de tuyauteries (avec raccordement)		
Sens d'écoulement		
Pente de tuyauterie		
Assemblage par bride		
Entrée de tuyauterie (a) Sortie de tuyauterie (b)		
Tuyauterie flexible		
Isolation thermique		

Air	A	A
Eau	E	E
- de refroidissement	ER	ER
- de lavage	EL	EL
- condensée	EC	EC
- déminéralisée	ED	ED
Vapeur	V	V
- surchauffée	VS	VS
Gaz	G	G
Diazote	GN	GN
Dihydrogène	GH	GH
Dioxygène	GO	GO
Fluide thermique	FT	FT
Fluide frigorigène	FF	FF
Fluide réfrigérant	FR	FR
Saumure	SA	SA

Robinetterie

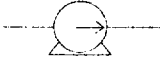









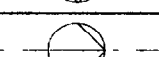
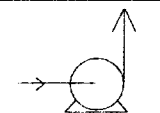
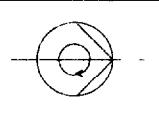

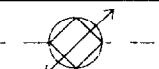
Nom	Norme 1976	Norme 1995
Robinet (symbole général)		
Disque de rupture (a) à surpression (b) à dépression		
Soupape de sûreté		
Purgeur		
Clapet de non retour		
Clapet d'arrêt		
Clapet de pied de crépine		
Robinet vanne		
Robinet à soupape		 ou 
Robinet à tournant droit		
Robinet à papillon		
Robinet d'équerre ou d'angle (2, 3 ou 4 orifices)	 	  
Robinet de régulation		 ou 
Régulateur autonome détenteur		

Accessoires





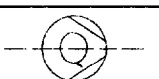




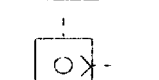
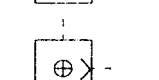
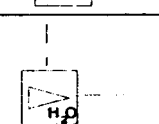


Nom	Norme 1976	Norme 1995
Évacuation		
Respiration		
Pulvérisation par buse		
Pulvérisation par rampe herse et nochère		
Florentin Séparateur avec florentin ouvert		
Florentin Séparateur avec florentin fermé		
Regard d'écoulement		
Arrête flamme		
Filtre (sur canalisation)		
Adsorbent ou Absorbent		
Accessoire divers		
Piège à vide		
Garde hydraulique		
Dispositif anti bélier		
Mise à la terre		
Siphon		

Manutention des fluides

Liquides

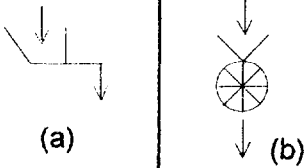
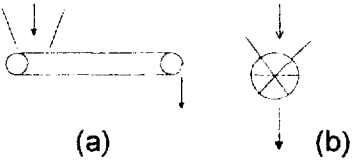
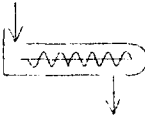
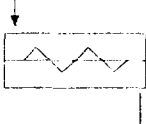

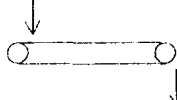
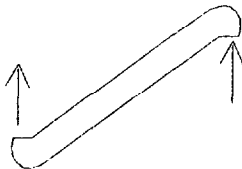

Noms	Norme 1976	Norme 1995
Pompe Symbole général		
Pompe Volumétrique		
Pompe Volumétrique à engrenages		
Pompe Volumétrique alternative à piston		
Pompe Volumétrique alternative à membrane		
Volumétrique à palette		
Pompe Rotodynamique		
Pompe centrifuge		
Pompe doseuse		

Gaz

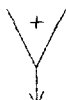
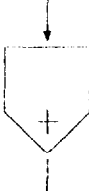
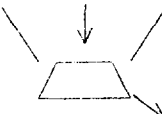
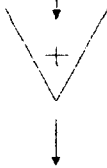
Compresseur volumétrique		
Compresseur volumétrique à palettes		
Compresseur volumétrique à piston		
Compresseur volumétrique à membrane		
Centrifuge		
Ventilateur		
Pompe à vide (en général)		
à palettes		
A anneau liquide		
Éjecteur pour le vide (à eau)		
Appareil à jet (général) injecteur éjecteur		

Manutention des solides

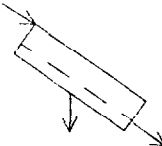
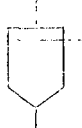
Distribution et transport

Noms	Norme 1976	Norme 1995
Distributeur (a) à bande (b) écluse		
Transporteur à hélice		
Transporteur à bande		
Transporteur à godets		

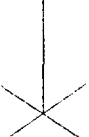
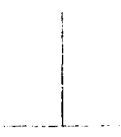
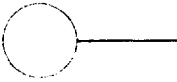
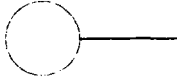
Fragmentation

Broyeur		
Concasseur		

Tamis




Tamis à toile		
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Agitation

Agitateur et mélangeurs de tous types		
Moteur de tout type		

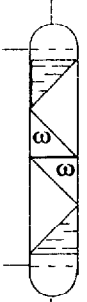
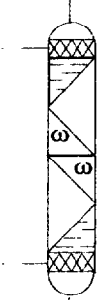
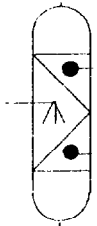
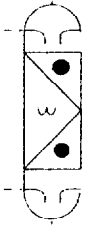
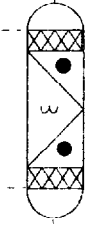
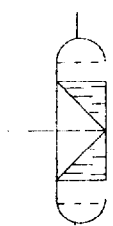

Colonnes

Normes 1976

		
Colonne	Colonne à plateaux	Colonne à garnissage


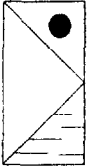
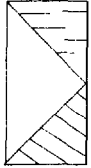
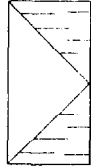



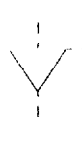

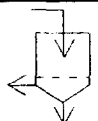

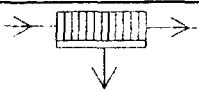
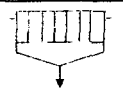


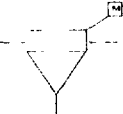
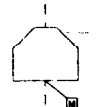
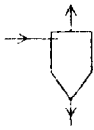
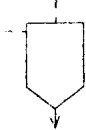
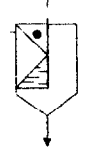
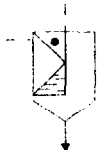
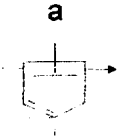
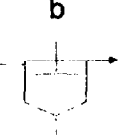
Normes 1995

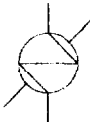
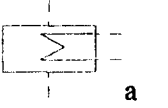
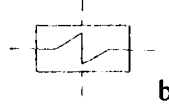
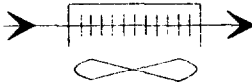
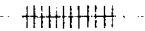
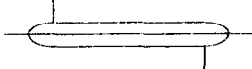

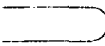
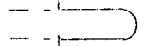
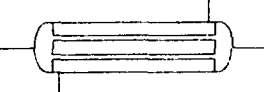
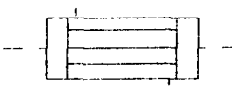

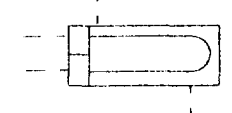
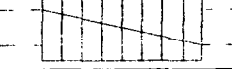

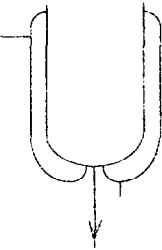
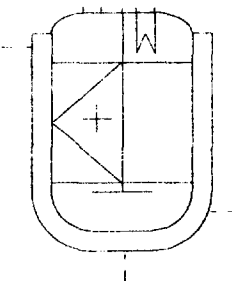
On pourra se reporter à la page 'APPAREILS de SEPARATION' pour retrouver les symboles généraux


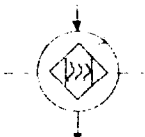
			
Extraction liquide / liquide Plateaux perforés	Extraction liquide / liquide à garnissage		
			
Séparation gaz / gaz à pulvérisation	Séparation gaz / gaz à ruissellement	Séparation gaz / gaz à garnissage	
			
Rectification- Distillation Plateaux perforés	Rectification- Distillation à garnissage		

Appareils de séparation

Symbole généraux des séparations




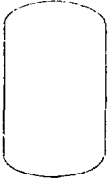

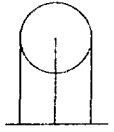
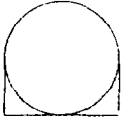

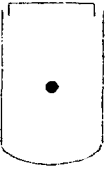

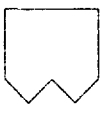

 Sol / gaz	 Liq / gaz	 Sol / Liq	 Liq / Liq				
Noms		Norme 1976		Norme 1995			
Décantation							
Filtration (général)							
à cuve ouverte							
à depression (buchner)							
Filtre-presse							
Filtre à tambour							
Essoreuse							
Centrifugeuse							
Cyclone (a) Cyclone liquide gaz (b)		 a		 a		 b	
Hydrocyclone							
Flottation pneumatique (a) Flottation agitée (b)				 a		 b	

Échangeurs de chaleur		
Noms	Norme 1976	Norme 1995
Symbole général		
Refroidisseur (a) Réchauffeur (b)		 
Tube à ailettes		
Double enveloppe (Liebig)		
Tube en U (épingle)		
Faisceau tubulaire		
Faisceau à tubes en U		
Echangeur à plaques		
Serpentin		
Cuve à double enveloppe Réacteur de type Grignard		

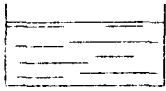

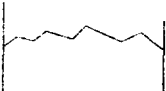
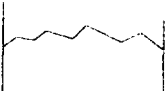
Chauffage		
Noms	Norme 1976	Norme 1995
Séchoir tournant		

Réservoirs et produits

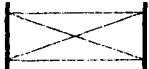
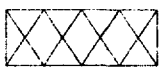
Réservoirs

Noms	Norme 1976	Norme 1995
Ouvert		
Fermé		
Sous pression		
Sphérique		
Gazomètre		
Silo	 	

Produits



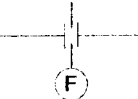





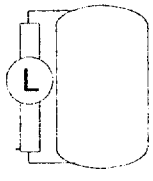


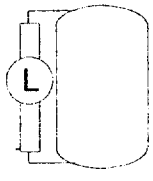


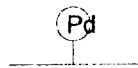



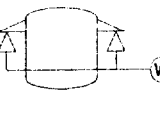
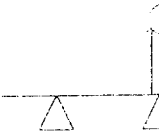
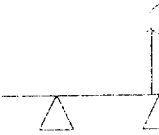
Produit liquide		
Produit solide		

Garnissage

Symbole		
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Mesures et contrôle

Symbole des grandeurs mesurées : 1ère lettre

Noms		Norme 1976	Norme 1995	
Analyse	A			
Débit (Flow)	F	Symbole général 	 Compteur	
		Diaphragme 		
		Rotamètre 		
Densité	D			
Niveau (Level)	L	(a) Symbole général 		
		(b) Niveau en verre 		
		(c) Point de mesure intérieur 		
		(d) Indication locale de niveau 		
Pression (Pressure)	P	Symbole général 		
		Pd	Pression différentielle 	
Température	T	Symbole général 		
Masse	W	(a) peson 		
		(b) bascule 		

Autres Grandeurs



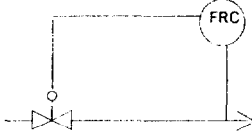
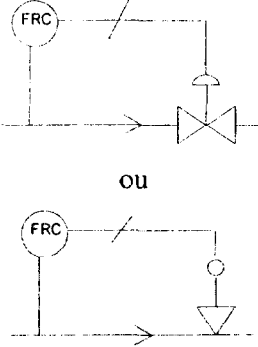
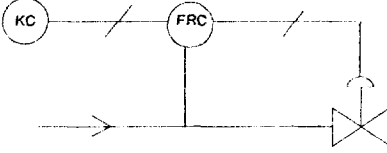
Conductivité	C	Viscosité	N	pH	PH
Temps	K	Humidité	M	Analyse	A

Autres lettres

Seconde lettre

Grandeur lue	I	Grandeur Enregistrée	R	Alarme	A
Totalisation	Q				
Troisième lettre					
Grandeur régulée	C				

Régulation

Nom	Norme 1976	Norme 1995
Actionneur		
Débit régulé		
Débit régulé pendant un temps donné		
Débit enregistré, totalisé et régulé		