



신개념 기술전자도서관 Knovel(노블) 사용매뉴얼

실제 사용방법 예시

July, 2022

Engineering Team - Key Lee (이기혁 솔루션매니저)



Knovel®이란?

- Knovel (노블)
- Knovel Subject Areas(주제분야)
- Knovel Contents Partners

Knovel® 검색방법

- Knovel에서 제공하는 기술정보의 종류
- Knovel Home Page – 시작페이지
- Basic Search - 기본검색

Knovel® 활용

- Property Search - 재료의 물성검색
- Knovel Graph - 그래프
- Browse - 서적검색
- Knovel Tools - 기타 Knovel 툴



Knovel[®](노블) www.knovel.com

1. 2000년 미국엔지니어에 의해 개발된 공학용 툴로서 2014년 Elsevier 제품으로 통합
2. 검색어 입력만으로 엔지니어 및 연구자에게 필요한 **서적, 표, 그래프, 방정식**을 제공하는 엘스비어의 웹클라우드 기반 기술정보 데이터베이스
3. 실제 현업에서 필요한 **핸드북, 매뉴얼, 가이드라인 및 기술서적**을 기반으로 기술전문가에게 필요한 데이터를 제공
4. Elsevier의 서적 뿐만이 아닌 다른 160여 곳의 학회와 출판사에서 제공받은 인증된 11,000 여권의 공학·과학서적 및 핸드북 등을 한 플랫폼에서 제공
5. 연구분야에 따라 선택가능 한 35개의 주제 분야에 관하여 기술정보를 제공하여 전 세계 기업의 연구 및 개발자료로 활용 중



Knovel[®] Subject Areas (주제분야)

No.	Subject Areas	No.	Subject Areas
1	Adhesives, Coatings, Sealants & Inks	19	Marine Engineering & Naval Architecture
2	Aerospace & Radar Technology	20	Mechanics & Mechanical Engineering
3	Biochemistry, Biology & Biotechnology	21	Metals & Metallurgy
4	Ceramics & Ceramic Engineering	22	Mining Engineering & Extractive Metallurgy
5	Chemistry & Chemical Engineering	23	Nanotechnology
6	Civil Engineering & Construction Materials	24	Nondestructive Testing & Evaluation
7	Composites	25	Oil & Gas Engineering
8	Computer Hardware Engineering	26	Optics & Photonics
9	Earth Sciences	27	Pharmaceuticals, Cosmetics & Toiletries
10	Electrical & Power Engineering	28	Plastic & Rubber
11	Electronics & Semiconductors	29	Process Design, Control & Automation
12	Engineering Management & Leadership	30	Safety & Industrial Hygiene
13	Environment & Environmental Engineering	31	Software Engineering
14	Fire Protection Engineering & Emergency Response	32	Sustainable Energy & Development
15	Food Science	33	Textiles
16	General Engineering & Project Administration	34	Transportation Engineering
17	Industrial Engineering & Operations Management	35	Welding Engineering & Materials Joining
18	Manufacturing Engineering	36	Promotion Title



Knovel® Contents Partners (일부예시)



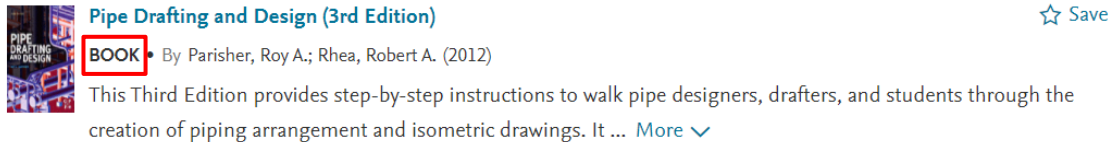
신개념 기술전자도서관 Knovel 사용매뉴얼

2022-07-20

Knovel®에서 제공하는 기술정보의 종류

1. Book - 서적

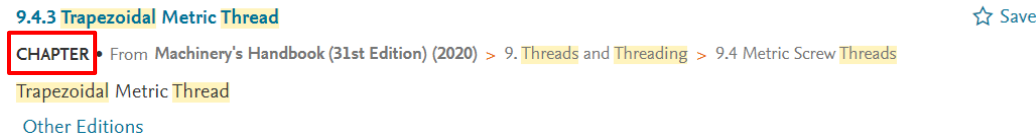
- 키워드 검색 시 제목, 서지 및 목차에 해당 키워드가 매칭된 경우 해당 기술서적이 검색결과로 나타남
- 검색결과는 아래와 같이 왼쪽에 **BOOK** 으로 표시되며, 제목을 클릭하면 해당 서적의 목차, 관련서적 및 추가정보를 확인할 수 있으며, 본문전체도 확인가능



- 표시된 목차 중 원하는 챕터(章)을 클릭하면 해당 원문으로 접속가능 - 보다 자세한 정보는 이후 다시 설명

2. Chapter - 챕터(章)

- 키워드 검색 시 챕터(章) 및 본문에 해당 키워드가 매칭된 경우 서적본문이 검색결과로 나타남
- 검색결과는 아래와 같이 왼쪽에 **CHAPTER** 로 표시되며, 제목을 클릭하면 해당 키워드가 검색된 서적본문으로 곧바로 이동되어 해당 챕터(章)를 확인가능



Knovel®에서 제공하는 기술정보의 종류

3. Table – 표

- 서적에서 발췌한 표 제공
- 검색결과는 아래와 같이 왼쪽에 **TABLE**로 표시되며, 제목을 클릭하면 해당 표(PDF, 엑셀 및 CSV)를 활용가능

Table 9b. Estimated Minimum Mechanical Properties of Wrought Aluminum alloys (Metric units)

TABLE From Aluminum Alloy Database

[View Full Table](#) Preview - 1 of 1187 records. Full table shows more columns and functions.

alloy type	alloy name	specification	form	condition	basis	thickness (in)	width (in)	$F_{0.2}$ ultimate tensile stress @ RT (ksi)	$F_{0.2}$ yield stress @ RT (ksi)	$F_{0.2}$ ultimate tensile stress @ RT (ksi)	$F_{0.2}$ yield stress @ RT (ksi)	$F_{0.2}$ ultimate tensile stress @ RT (ksi)	$F_{0.2}$ yield stress @ RT (ksi)	$F_{0.2}$ ultimate tensile stress @ RT (ksi)	$F_{0.2}$ yield stress @ RT (ksi)	table no.	physical properties
Aluminum Alloy Sheet	2024-T3	AMS 4244	Arched Fiber Reinforced Sheet	S	0.002 - 0.010	96(1.483)	30(1.181)	80(5.510)	48(3.379)	80(5.510)	48(3.379)	80(5.510)	48(3.379)	80(5.510)	48(3.379)	7.1.1.93	Physical
Aluminum Alloy Sheet	2024-T3	AMS 4244	Arched Fiber Reinforced Sheet	S	0.002 - 0.010	96(1.483)	30(1.181)	80(5.510)	48(3.379)	80(5.510)	48(3.379)	80(5.510)	48(3.379)	80(5.510)	48(3.379)	7.1.1.93	Physical
Aluminum Alloy Sheet	2024-T3	AMS 4244	Arched Fiber Reinforced Sheet	S	0.002 - 0.010	96(1.483)	30(1.181)	80(5.510)	48(3.379)	80(5.510)	48(3.379)	80(5.510)	48(3.379)	80(5.510)	48(3.379)	7.1.1.93	Physical

1 Title: Metallic Materials Properties Development and Standardization
 2 Table: Miscellaneous Alloys and Hybrid Materials -- Design Mechanical Properties
 3 DOWNLOAD SHOWS ONLY THE DISPLAYED DATA, UP TO 56 ROWS

alloy type	alloy name	specification	form	condition	basis	thickness (in)	$F_{0.2}$ ultimate tensile stress @ RT (ksi)	$F_{0.2}$ yield stress @ RT (ksi)	$F_{0.2}$ ultimate tensile stress @ RT (ksi)	$F_{0.2}$ yield stress @ RT (ksi)	$F_{0.2}$ ultimate tensile stress @ RT (ksi)	$F_{0.2}$ yield stress @ RT (ksi)	$F_{0.2}$ ultimate tensile stress @ RT (ksi)	$F_{0.2}$ yield stress @ RT (ksi)	table no.	physical properties	
Aluminum Alloy Sheet	2024-T3	AMS 4244	Arched Fiber Reinforced Sheet	S	0.002 - 0.010	96(1.483)	30(1.181)	80(5.510)	48(3.379)	80(5.510)	48(3.379)	80(5.510)	48(3.379)	80(5.510)	48(3.379)	7.1.1.93	Physical
Aluminum Alloy Sheet	2024-T3	AMS 4244	Arched Fiber Reinforced Sheet	S	0.002 - 0.010	96(1.483)	30(1.181)	80(5.510)	48(3.379)	80(5.510)	48(3.379)	80(5.510)	48(3.379)	80(5.510)	48(3.379)	7.1.1.93	Physical
Aluminum Alloy Sheet	2024-T3	AMS 4244	Arched Fiber Reinforced Sheet	S	0.002 - 0.010	96(1.483)	30(1.181)	80(5.510)	48(3.379)	80(5.510)	48(3.379)	80(5.510)	48(3.379)	80(5.510)	48(3.379)	7.1.1.93	Physical

4. Graph – 그래프

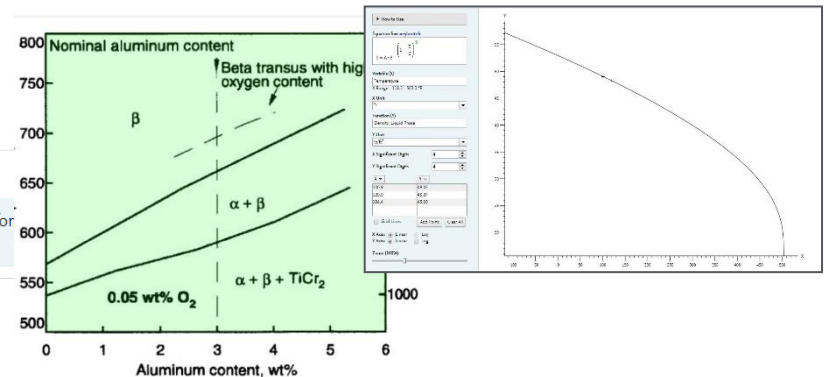
- 서적에서 발췌한 그래프 및 데이터베이스에서 추출한 추세선을 제공
- 검색결과는 **GRAPH**로 표시되며, 제목 및 해당 아이콘을 클릭하면 그래프 활용가능

Interactive Graphs

GRAPH From Mechanical Engineer's Reference Book (12th Edition)

[View List of Graph](#) Preview - 1 of 1 record. Full table shows more columns and functions.

graph digitizer	x-axis label	y-axis label	graph title
Open Graph	Aluminium concentration	Temperature	Partial phase diagrams for



Knovel®에서 제공하는 기술정보의 종류

5. Conference Proceeding – 학회발표모음집

- [학회에서 서적으로 출간한 학회발표모음집](#)을 제공하며, 해당 Conference Proceeding이 검색결과로 나타남
- 검색결과는 CONFERENCE PROCEEDING 으로 표시되며, 제목을 클릭하면 해당자료로 이동하여 내용확인

25.5.4 Intake Pipe

☆ Save

CONFERENCE PROCEEDING By Redmond, Steve; Romero, Victor (2011)

Intake Pipe The intake pipe will be constructed beneath the discharge apron with a horizontal pipe invert of 404 ft. The excavation for the 54-in pipe will likely encounter Austin Limestone and require the use of heavy-duty excavation ... [More](#) ✓

6. Engineering Case – 기술실무사례

- 검색 키워드와 관련된 [기술실무사례](#)가 Knovel 클라우드 서버에서 존재하는 경우 제공되며, ENGINEERING CASE로 표시됨

Void Fraction Correlations for Vertical Upward Two-Phase Flow in Pipes

☆ Save

ENGINEERING CASE By Ghajar, Afshin J.; Tang, Clement C. (2019)

Description of Case Vertical upward two-phase flow in pipes is found commonly in industries involving oil and gas production, water treatment, nuclear reactors, and geothermal systems. Whether the two-phase flow exists in the form of ...

[More](#) ✓

Description of Solution

A comprehensive comparison of more than 50 void fraction correlations with a total of 1,208 experimental data points compiled from 10 independent sources for gas-liquid combinations and pipe diameters has yielded two correlations that deliver excellent results.* The first correlation was proposed by Nicklin and associates,¹ and the other by Rouhani and Axeisson⁴. Both correlations were based on the [drift flux model](#) and have the following expression:

$$\alpha = \frac{V_{g2}}{C_0(V_{g2} + V_{L2}) + u_{gm}} \quad (1)$$

The two-phase distribution coefficient (C_0) and gas drift velocity (u_{gm}) are given as follows:

$$C_0 = 1.2 \quad \text{and} \quad u_{gm} = 0.35\sqrt{gD} \quad (2)$$

$$C_0 = 1 + 0.2(1-x) \quad \text{and} \quad u_{gm} = 1.18 \left[\frac{g\sigma(\rho_1 - \rho_2)}{\rho_1^2} \right]^{0.25} \quad (3)$$



Knovel®에서 제공하는 기술정보의 종류

7. Dictionary – 기술사전

- 검색 키워드가 기술사전에 있는 경우 **DICTIONARY**로 표시되며 해당 정보제공

8. Encyclopedia – 백과사전

- 위의 기술사전과 마찬가지로 검색 키워드가 백과사전에 있는 경우 **ENCYCLOPEDIA**로 표시, 해당 정보제공

heat loss

☆ Save

DICTIONARY From Dictionary of Energy (Expanded Edition) (2009) > Haber-Bosch process to Hz

heat loss HVAC. a decrease in the amount of heat contained in an interior space, resulting from heat flow through walls, windows, and other building surfaces, and from the exfiltration of warm air.

Other Editions

5.14.102 Soil Pipes and Pipe Flow

☆ Save

ENCYCLOPEDIA From Water Encyclopedia, Volumes 1-5 (2005) > 5.14 Ground Water

SOIL PIPES AND PIPE FLOW 401 Soil Restoration Series, 17, Springer-Verlag, New York, pp. 261–310. 15. Zayed, A.M., Lytle, C.M., and Terry, N. (1998). Accumulation and volatilization of different species of selenium by plants. *Planta* 206: ... [More](#) ✓

10. Regulatory – 규정집

- **공공기관에서 출간한 규정집**을 제공하며, 검색결과는 **REGULATORY**로 표시되어 해당 정보제공

Parts 700-789, Environmental Protection Agency (Continued) (Pages 24319-24755)

☆ Save

REGULATORY (2015)

at <http://www.epa.gov/pcb>, or from VerDate Sep2014 15:30 Aug 05, 2015 Jkt 235181 PO 00000 Frm 01059 Fmt 8010 Sfmt 8010 Q:\40\40V31.TXT 31\po we ll o n ... [More](#) ✓



Knovel®에서 제공하는 기술정보의 종류

11. Equation – 기술공식

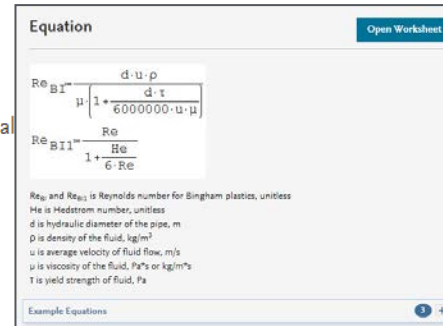
- 실무에서 자주사용하는 기술공식을 수치입력만으로 계산이 가능한 워크시트를 제공
- 검색결과는 EQUATION으로 표시되며, 제목을 클릭하면 해당 기술공식에 관한 설명과 워크시트 제공

Reynolds Factor for Bingham Plastic Fluids—Pipe Flow

EQUATION By Knovel (2014)

For Bingham plastics, an expression for the Reynolds number based on the ratio of inertial


Preview 



Equation Open Worksheet

$$Re_{B1} = \frac{d \cdot u \cdot \rho}{\mu \left(1 + \frac{d \cdot \tau}{6000000 \cdot u \cdot \mu} \right)}$$
$$Re_{B11} = \frac{Re}{1 + \frac{Re}{6 \cdot T}}$$

Re_{B1} and Re_{B11} is Reynolds number for Bingham plastics, unitless
 He is Hedstrom number, unitless
 d is hydraulic diameter of the pipe, m
 ρ is density of the fluid, kg/m³
 u is average velocity of fluid flow, m/s
 μ is viscosity of the fluid, Pa*s or kg/m*s
 T is yield strength of fluid, Pa

Example Equations 3 

Excel – 엑셀 스프레드시트

- 화학공학, 건설, 동역학 등의 실험값 및 예제 등을 엑셀 스프레드 시트로 제공
- Knovel이 엘스비어에 통합되기 전 제공했던 데이터베이스 자료로서 2007년 이후 현재까지 업데이트 없음

Mathcad – 기술워크시트 자료

- 기본역학, 유한요소해석법, 유체역학, 열역학 등을 Mathcad에서 활용할 수 있는 워크시트
- Knovel이 엘스비어에 통합되기 전 제공했던 데이터베이스 자료로서 2011년 이후 현재까지 업데이트 없음





Knovel Home Page

Knovel Home Page - 시작페이지



1. <https://app.knovel.com>에 접속하면 상기 시작페이지가 나타남
2. 중앙 오른쪽에 있는 검색창에 키워드를 입력한 후 돋보기 아이콘을 클릭하거나, 엔터 키를 이용하여 검색을 수행
3. 다음 장에서 Knovel에서 제공하는 검색정보 선택 및 제한 기능에 대해서 설명

Knovel Home Page - 시작페이지



The screenshot shows the Knovel home page interface. At the top, there is a navigation bar with the Knovel logo, a support center link, and a user welcome message. Below this is a main header with the site's purpose: 'Engineering Data and Technical References to Solve Engineering Problems'. The central area features a search bar with a dropdown menu open, showing various search filters. The filters are categorized into 'SEARCH BY...' (Title, Author, Publisher), 'LIMIT RESULTS TO...' (Books and Chapters, Databases, Equations, Graphs, Tables), and 'SPECIAL TOOLS' (Material Property Search). The background of the page displays several interactive tool cards: 'Interactive Graphs', 'Property Table Data', and 'Equations'. A vertical 'Feedback / Improve Knovel' button is located on the right side.

4. 검색창 왼쪽을 클릭하면 검색정보를 선택하거나 제한할 수 있음

- All (전체검색)
- Title (서적제목), Author (저자), Publisher (출판사)
- Books and Chapters (서적 및 장(章)), Databases (기술데이터), Equation (공식), Graphs (그래프), Tables (표)
- Material Property Search (물성정보 검색)

5. 다음 장에서 Knovel에서 제공하는 기술정보의 종류와 기본화면 내 기능에 대해서 설명

Knovel Home Page - 시작페이지



The screenshot shows the Knovel Home Page interface. On the left is a vertical navigation menu with icons and labels: 1. Home, 2. Property Search, 3. My Knovel, 4. My Folder, 5. Browse, 6. Corrosion Data, 7. Equations, 8. Unit Converter, 9. More Tools. The main content area includes a header with 'Engineering Data and Technical References to Solve Engineering Problems', a search bar with 'SEARCH KNOVEL' and 'PROPERTY SEARCH' buttons, a dropdown menu for 'All' and a search input field containing 'tool steels', and an 'Include Synonyms' toggle. Below the search bar are four feature tiles: 'Material Property Search', 'Interactive Graphs', 'Property Table Data', and 'Equations'. At the bottom, there are three panels: 'Recent Activity' with a list of viewed documents, 'Explore Renewable Energy' with a circular diagram of energy sources (Solar, Wind, Hydro, Geothermal, Marine), and 'Solve Equations' with a mathematical formula.

1. **Home:** 홈페이지 시작화면
2. **Property Search:** 재료물성정보 제공(표, 그래프)
3. **My Knovel:** 자주 사용하는 콘텐츠 관리
4. **My Folder:** 자주 사용하는 콘텐츠 폴더 이동
5. **Browse:** Knovel 서적컨텐츠를 주제분야 별로 확인
6. **Knovel Corrosion:** 부식정보(미제공)
7. **Equations:** 기술공식 활용가능
8. **Unit Converter:** 공학단위변환기
9. **More Tools:** 모바일용 My Knovel ToGo 등 다운가능

10. **Search:** 키워드, 서적제목 및 저자명으로 자료검색
11. **Property Search:** 재료물성정보 제공(표, 그래프)
12. **Support Center:** 고객센터
13. **Welcome:** 사용자정보 업데이트, 암호변경 및 로그아웃
14. **Contents Selection:** 검색정보 선택 및 제한
15. **Basic Search:** 기본검색창
16. **Include Synonyms:** 검색결과에 동의어 포함여부 결정
17. **Intro Video & Example:** 소개동영상 및 예시 설명제공
18. **Information Panels:** 최근검색기록, 추가컨텐츠, 공지사항

Knovel Home Page - 시작페이지



1. <https://app.knovel.com>에 접속하면 상기 시작페이지가 나타남
2. 중앙 오른쪽에 있는 검색창에 키워드를 입력한 후 돋보기 아이콘을 클릭하거나, 엔터 키를 이용하여 검색을 수행
3. 다음 장에서 Knovel에서 제공하는 검색정보 선택 및 제한 기능에 대해서 설명

Knovel Search – 기본검색 (예시)



1. 기본검색창에 “Machinery”를 입력
2. “Machinery”를 입력하자마자 관련용어가 “KEYWORDS”로 제시
3. 아래 “RESOURCES”에서는 검색하고자하는 keyword가 제목, 서지 및 목차에 포함된 기술서적을 확인할 수 있으며, 클릭하면 해당 서적으로 이동

Knovel Search - 기본검색



The screenshot displays the Knovel search interface. At the top, the Knovel logo is on the left, and 'Support Center' and 'Welcome Key Lee' are on the right. Below the logo, the tagline 'Engineering Data and Technical References to Solve Engineering Problems' is visible. The main search area features a search bar with 'Machinery' entered. A dropdown menu is open, showing 'KEYWORDS' and 'RESOURCES' sections. The 'KEYWORDS' section lists 'machinery', 'machinery noise', 'machinery spaces', 'machinery safety', and 'machinery directive'. The 'RESOURCES' section lists 'Machinery's Handbook Made Easy', 'Machinery's Handbook (26th Edition)', 'Machinery's Handbook (31st Edition)', and 'Machinery's Handbook Pocket Companion (2nd Edition)'. The interface also includes a sidebar with navigation options like 'Property Search', 'My Knovel', 'My Folder', 'Browse', 'Corrosion Data', 'Equations', 'Unit Converter', and 'More Tools'. A 'Tutorial Video' link is present in the top right of the search area.

1. **Search:** 키워드, 구문, Boolean('title:', 'author:') 검색
2. **Keywords:** 관련 키워드 자동추천
3. **Resources:** 검색된 문헌 및 기술서적 제시

Basic Search - 검색 시 유의사항

1. Boolean 방식의 연산자를 검색에 사용

- **OR** 연산자: 주제어로 지정한 조건이 **한개라도** 포함된 결과를 모두 검색

예 : rapid transit OR light rail OR subways seatbelts OR seat belts

- **AND** 연산자: 주제어로 지정된 조건이 **모두 다** 포함된 결과만을 검색

예 : Prosthetics AND biocontrol

- **NOT** 연산자: 검색 조건 중에 **하나를 제거**

예: mines OR mining NOT "data mining"

2. 별표(*)는 같은 글자로 시작하는 단어를 검색

- **별표(*)**는 같은 글자로 시작하는 모든 단어를 별표가 사용되는 지점부터 검색하는 명령어임

예 : 'Comput*'로 검색시 computer, computerized, computation, computational 등을 검색

3. 오·탈자(Typo) 주의

- 검색어 자동수정 기능이 있으나, 광범위하고 다양한 공학분야에 모두 적용되지 못함

예 : applied metal **foming** → applied metal **forming** , **aireless** tire → **airless** tire

4. 약어 및 간단 화학원소기호 검색

예 : CAP → 건설, 식품, 화학 등 다양한 분야에 쓰이는 용어로 가급적 Full Name으로 검색
분자식 검색 시에는 N2O4 → N2O4로 검색 가능



Knovel Search Result - 검색결과



The screenshot displays the Knovel search interface. At the top, the search term 'Machinery' is entered in the search bar. The results section shows a total of 5,200+ results, sorted by Relevancy. A filter menu on the left allows users to refine results by content type (e.g., Book, Chapter, Conference Proceeding) and concept (e.g., advantages and disadvantages, clutches, flexible couplings). The main results list includes two book entries: 'Machinery Lubrication and Reliability' by Sahoo, Trinath (2020) and 'Petrochemical Machinery Insights' by Bloch, Heinz P. (2017). Below this, a table of results is shown under the 'Engineering Village' section, with columns for Journals, Conferences, and Standards. The table lists specific articles related to machinery, such as 'DNA replication machinery: Insights from in ...' and 'Communication between multi-agents in rotating ...'.

1. 검색결과 5,200건 이상 검색되었으며, **Book**(서적) 이 101권, Machinery가 언급된 **Chapter**(본문) 4,883건 **Graphs**(그래프) 9건, **Tables**(표) 193건, **Conference Proceeding**(학회발표자료) 77건 등이 검색됨
2. 왼쪽 아래 '**Concept**'에서는 검색한 keyword를 보다 세분화 시킨 관련 검색어로 추가 검색 수행가능
3. 검색결과는 **Relevancy**(관련도) 기준이며, 관련도 외에도 **최신 발행일** 순으로도 정렬가능
4. 다음 장에서 검색결과 내 메뉴의 기능에 대해서 설명

Knovel Search Result - 검색결과



The screenshot shows the Knovel search results page for the keyword 'Machinery'. The search bar (1) contains 'Machinery'. The page displays 5200+ results (7) sorted by Relevancy (8). A sidebar on the left shows navigation options like 'Property Search', 'My Knovel', 'My Folder', 'Browse', 'Corrosion Data', 'Equations', 'Unit Converter', and 'More Tools'. The main content area shows search filters (5) for 'Content Type' (Book, Chapter, Conference Proceeding, Dictionary, Encyclopedia, Engineering Case, Graph, Regulatory, Table) and 'Concept' (advantages and disadvantages, clutches, flexible couplings, generalising, noise control). A 'Date' filter dropdown (12) is open, showing options: Last 2 years (464), Last 5 years (1284), Last 10 years (2714), and Last 20 years (4549). Search actions include 'Share Search Query' (2), 'Save Search Query' (3), and 'Tutorial Video' (4). A 'Feedback / Improve Knovel' button is visible on the right.

1. **검색어 창:** 검색한 키워드 표시
2. **Share Search Query:** 검색 결과 이메일 공유
3. **Save Search Query:** 해당 검색어 저장
4. **Tutorial Video:** 튜토리얼 비디오
5. **Contents Type:** 콘텐츠 유형별로 결과를 필터링
 - Book · Chapter · Conference Proceeding · Graph
 - Table · Equations · Dictionary · Engineering Case 등
6. **Concept:** Knovel 콘텐츠 중 관련 기술용어 추가검색
7. **Results:** 총검색결과 수
8. **Sort by:** 관련도 또는 최신 출판일 순으로 결과 정렬
9. **Include out of subscription results:** 미구독 주제분야 검색결과 포함여부 결정
10. **검색결과**
11. **Compendex on Engineering Village:** Knovel에서 제공하지 않는 논문정보를 보완하기 위해 서지정보제공 링크 (차후 서술)
12. **Date:** 최신 출간일 기준으로 필터링

Knovel Search Result – 검색결과 (한글번역)



The screenshot shows the Knovel search results for 'Machinery'. The search bar contains 'Machinery' and the results are displayed in Korean. A red box highlights the Google Translate browser extension in the top right corner, which is set to translate from English to Korean. The search results include:

- 새로운 기계 윤활 및 신뢰성** (New Machine Lubrication and Reliability) by Sahoo, Trinath (2020). Description: 대부분 "비하인드"에 해당하지만 윤활은 모든 유형의 기계, 차량 및 항공기에 사용됩니다. 그 유용성은 모든 산업, 모든 유형의 제조, ... 더
- 석유화학 기계 인사이트** (Petroleum Refining Machinery Insights) by 이크 블로르, 하인즈 P. (2017). Description: 이 책은 마모에서 ... 더

Below the results, there is a section for 'Compendex 에서 초록 보기 엔지니어링 빌리지' (View Abstracts from Compendex Engineering Village) with a table of conference papers:

저널	회의	표준
DNA 복제 기계: 내부의 통찰력 ... 보카네그라, 레베카; 이스마엘 플라자, 조지아; ... (2021) 전산 및 ...	회전하는 다중 에이전트 간의 통신 ... 진즈강; Chen, Xingyu; (2020) 국제 저널 오브 ...	회전 기계의 고장 진단을 위한 고유 부품 필터링 ... ZHANG, Zongzhen; 리, 순밍; 루, ... (2021) 중국 항공 저널

- Knovel은 Google Chrome을 이용하여 해당 메뉴 및 검색결과는 웹사이트 상에서 번역이 가능함 (기술용어 번역상 일부 오역존재)
- 단, 검색어 입력의 경우 영어로 검색수행 필요

Knovel Search Result - 검색결과



The screenshot shows the Knovel search interface. At the top, the search bar contains 'Machinery handbook'. A dropdown menu is open, displaying 'RESOURCES' with the following items:

- Machinery's Handbook Made Easy
- Machinery's Handbook (26th Edition)
- Machinery's Handbook (31st Edition)
- Machinery's Handbook Pocket Companion (2nd Edition)

The main search results area displays two primary results:

- Machinery Lubrication and Reliability**: A book by Sahoo, Trinath (2020). Description: "While it is mostly 'behind the scenes,' lubrication is used wherever you look—in all types of machines, vehicles, and aircrafts. Its usefulness is everywhere, in every industry, from all types of manufacturing, ... More ▾"
- Petrochemical Machinery Insights**: A book by Bloch, Heinz P. (2017). Description: "This book is a priceless collection of solutions and advice from author on a broad range of equipment management themes, from wear to ... More ▾"

On the left sidebar, there are filters for document types and concepts:

- Document types: Conference Proceeding (17), Dictionary (37), Encyclopedia (33), Engineering Case (6), Graph (9), Regulatory (4), Table (193).
- Concepts: advantages and disad..., clutches, flexible couplings, generalising, noise control.

7. 보다 정밀한 검색을 위해 “Machinery Handbook”을 왼쪽 위 검색창에서 재검색
8. Machinery Handbook 과 관련된 RESOURCES(관련서적)으로 추천하는 것을 확인할 수 있음

Knovel Search Result - 검색결과



Knovel[®] Home > Search : Machinery handbook, book

Machinery handbook

Include Synonyms

Advanced Search

22 Results

Sort By Relevancy

Include out of subscription results

Content Type Apply

- Clear All
- Book (22)**
- Chapter (891)
- Conference Proceeding (17)
- Dictionary (4)
- Encyclopedia (13)
- Graph (4)
- Regulatory (1)
- Table (154)

Date

External Links
Compendex from Engineering Village

Machinery's Handbook Made Easy ☆ Save
BOOK • By Janecek, Edward T. (2012)
This is a time-saving navigational tool for **Machinery's Handbook** for experienced professionals and beginners alike. You will learn how to quickly find exactly what you need from the **Handbooks** vast compilation ... [More](#)

Machinery's Handbook (26th Edition) ☆ Save
BOOK • By Oberg, E.; Jones, F.D.; Horton, H.L.; Ryffel, H.H. (2000)
This book is one of the most popular engineering references of all time and is considered the standard reference for the mechanical industries throughout the world. The 26th edition remains ... [More](#)

Handbook of Farm, Dairy, and Food Machinery ☆ Save
BOOK • By Kutz, Myer (2007)
This volume is a comprehensive reference for engineers who design and build farm **machinery**, processing equipment, shipping containers ... [More](#)

Machinery's Handbook (31st Edition) ★ Saved
BOOK • By Oberg, Erik; Jones, Franklin D.; Horton, Holbrook L.; Ryffel, Henry H.; McCauley, Christopher J.; Brengelman, Laura (2020)
Since the first edition published more than 100 years ago, this **handbook** has been the most popular engineering resource of all time. Universally considered the principal reference in the manufacturing and ... [More](#)

Other Editions

9. “**Machinery Handbook**” 검색된 결과는 1,000 건 이상이였으며, 이중 **Book** (서적)을 선택한 후 **Apply** 아이콘을 클릭하여 결과를 필터링함
10. 콘텐츠 종류별로 분류된 ‘**Books**’, ‘**Chapters**’, ‘**Conference Proceedings**’ 등을 선택하여 결과값에 대한 필터링 가능
11. 검색결과 중 **Machinery Handbook (31st Edition)**을 선택하여 제목을 클릭
12. 검색결과 좌측에 **BOOK** 표시는 서적 전체가 제공됨을 의미하며, 해당 서적에 대한 정보가 필요할 경우 우측하단의 **More**을 클릭하면 숨겨진 정보 확인가능

Knovel Search Result - 검색결과



9. “**Machinery Handbook**” 검색된 결과는 1,000 건 이상이였으며, 이중 **Book** (서적)을 선택한 후 **Apply** 아이콘을 클릭하여 결과를 필터링함
10. 콘텐츠 종류별로 분류된 ‘**Books**’, ‘**Chapters**’, ‘**Conference Proceedings**’ 등을 선택하여 결과값에 대한 필터링 가능
11. 검색결과 중 **Machinery Handbook (31st Edition)**을 선택하여 제목을 클릭
12. 검색결과 좌측에 **BOOK** 표시는 서적 전체가 제공됨을 의미하며, 해당 서적에 대한 정보가 필요할 경우 우측하단의 **More**을 클릭하면 숨겨진 정보 확인가능

Knovel Resource - Book



The screenshot shows the Knovel website interface. At the top, there is a search bar with the text "Search Knovel" and a magnifying glass icon. To the right of the search bar, there are links for "Support Center" and "Welcome Key Lee". Below the search bar, the breadcrumb trail reads "Home > Search : Machinery handbook, book > Machinery...st Edition".

The main content area features a large red-bordered box containing the following information:

- Machinery's Handbook (31st Edition)**
- Other Editions
- Since the first edition published more than 100 years ago, this handbook has been the most popular engineering resource of all time. Universally considered the principal reference in the manufacturing and mechanical industries, the Handbook is the ultimate collection of essential information needed by engineers, designers, drafters, metalworkers, toolmakers, machinists, educators, students, and serious home
- [View More](#)

Below this box, there are options for "Saved", "Citation", "Saved to Mobile", "Share", and "Resume Reading". A "Search Within" box is also present.

On the left side, there is a vertical navigation menu with icons for "Property Search", "My Knovel", "My Folder", "Browse", "Corrosion Data", and "Equations".

Below the navigation menu, there are several promotional banners:

- "New in Manufacturing Engineering" with a sub-header "Exceeding the Goal - Adventures in ..." and author "Ricketts, John Arthur".
- "85 Material Properties Tables" with a sub-header "Click to view available Tables in the resource."

The "Additional Information" section is highlighted with a red box and contains the following details:

- Additional Information**
- Author(s) / Editor(s): Oberg, Erik; Jones, Franklin D.; Horton, Holbrook L.; Ryffel, Henry H.; McCauley, Christopher J.; Brengelman, Laura
- Publisher: Industrial Press
- Copyright / Publication Date: 2020
- ISBN: 978-0-8311-3731-1
- Electronic ISBN: 978-1-5231-3482-3
- Knovel Release Date: 2020-11-30
- Knovel Subject Area(s): Manufacturing Engineering, Mechanics & Mechanical Engineering

The "Table of Contents" section is also highlighted with a red box and lists the following items:

- > Title Page
- Editorial Advisory Board
- Preface
- Table of Contents
- > 1. Mathematics
- > 2. Mechanics and Strength of Materials
- > 3. Properties, Treatment, and Testing of Materials
- > 4. Dimensioning, Gaging, and Measuring
- > 5. Tooling and Toolmaking
- > 6. Machining Operations
- > 7. Manufacturing Processes
- > 8. Fasteners

On the right side, there is a "Journals" section with a search bar and a list of journal titles, including "A Procedure for Experimental and Numerical Investigations of Turbine Machinery Labyrinth Shroud Seals" by Lazarev, L. Ya.; Fadeev, V.A.; (2020) Thermal Engineering, Cotton ginners handbook (2016 revised edition): The journal of cotton science is publishing, in serial form ... by Hughs, Sidney E.; (2016) Journal of Cotton Science, Life prediction of elastomeric U seals in hydraulic/pneumatic actuators using NSWC handbook by Shin, Jung Hun; Chang, Mu Seong; ... (2014) Transactions of the Korean ...

At the bottom right, there is a "Feedback / Improve Knovel" button and a "See all 86 results" link.

1. 검색결과 중 서적제목인 **Machinery Handbook (31st Edition)** 를 클릭하면 다음과 같은 화면이 나타남
2. 해당 화면에서는 서적의 **제목, 설명, 관련서적, 추가서적정보, 목차** 등이 제공
3. 다음 장에서 서적제목 클릭 후 메뉴의 기능에 대해서 설명

Knovel Resource - Book



The screenshot shows the Knovel website interface for the book "Machinery's Handbook (31st Edition)". The page is annotated with numbered callouts (1-11) pointing to various features:

- 1. Title:** Points to the book title "Machinery's Handbook (31st Edition)".
- 2. Save to My Knovel:** Points to the "Saved" button.
- 3. Citations:** Points to the "Citation" button.
- 4. Save to Mobile:** Points to the "Saved to Mobile" button.
- 5. Share:** Points to the "Share" button.
- 6. Related Books:** Points to the "New in Manufacturing Engineering" section.
- 7. Material Properties Table:** Points to the "85 Material Properties Tables" section.
- 8. Additional Information:** Points to the "Additional Information" section, which lists author(s), publisher, copyright, ISBN, and subject areas.
- 9. Table of Contents:** Points to the "Table of Contents" section, which lists chapters from 1 to 8.
- 10. Search Within:** Points to the "Search Within" search bar.
- 11. Compendex on Engineering Village:** Points to the "Search Within" search bar, which is linked to the Compendex on Engineering Village database.

- 1. Title:** 서적 표지, 제목, 간단설명 표시
- 2. Save to My Knovel:** 개인계정에 저장
- 3. Citations:** 서지관리프로그램으로 전송
- 4. Save to Mobile:** 모바일 기기 저장 (My Knovel ToGo)
- 5. Share:** 검색 결과 이메일 공유
- 6. Related Books:** 검색된 서적과 관련된 서적 추천
- 7. Material Properties Table:** 서적 내 표/그래프를 추출되어 제공되는 경우 전체 표로 제공

- 8. Additional Information:** 저자명, 출판사명, 출간일, ISBN 정보 등을 제공
- 9. Table of Contents:** 목차, 목차 내 Chapter(장)을 클릭하면 원문으로 이동
- 10. Search Within:** 목차 내 검색
- 11. Compendex on Engineering Village:** 검색된 서적과 관련된 논문 서지정보 추천 및 제공

Knovel Resource - Book



The screenshot shows the Knovel website interface. At the top, there is a search bar and navigation links for 'Support Center' and 'Welcome Key Lee'. The main content area displays the title 'Machinery's Handbook (31st Edition)' and a brief description. Below the title, there are options for 'Saved', 'Citation', 'Saved to Mobile', 'Share', and 'Resume Reading'. A 'Search Within' box is also present. The left sidebar contains various utility tools like 'Property Search', 'My Knovel', 'My Folder', 'Browse', 'Corrosion Data', 'Equations', 'Unit Converter', and 'More Tools'. The main content area features a 'New in Manufacturing Engineering' section with several book covers. Below this, there are two boxes: '85 Material Properties Tables' and '1 My Notes'. The 'Table of Contents' is listed, with the following items: Title Page, Editorial Advisory Board, Preface, Table of Contents, 1. Mathematics, 2. Mechanics and Strength of Materials, 3. Properties, Treatment, and Testing of Materials (highlighted with a red box), 4. Dimensioning, Gaging, and Measuring, 5. Tooling and Toolmaking, 6. Machining Operations, 7. Manufacturing Processes, and 8. Fasteners. On the right side, there is a 'Search Within' box and a list of search results, including 'A Procedure for Experimental and Numerical Investigations of Turbine Machinery Labyrinth Shroud Seals' and '(2020) Thermal Engineering Cotton ginners handbook (2016 revised edition)'. A 'Feedback / Improve Knovel' button is located at the bottom right of the page.

4. 목차에서 원하는 **Chapter (장)**를 클릭하면 **서적원문**으로 이동

5. 목차 중에서 **'3. Properties, Treatment, and Testing of Materials'**를 클릭하여 서적원문으로 이동

Knovel Resource - Book



Knovel Search Center Welcome Key Lee

Home > Search: Machinery handbook, book > Machinery's Handbook (31st Edition) > 3. Properties, Treatment, and Testing of Materials

Content Save Share Save to Mobile Download Print Citations Hide Header Screen Reader Add Note View Notes Search within

Machinery's Handbook, 31st Edition
372 **THERMAL PROPERTIES OF MATERIALS**

Table 8. Typical Values of Coefficient of Linear Thermal Expansion for Thermoplastics and Other Commonly Used Materials

Material ^a	in/in/deg F × 10 ⁻⁵	cm/cm/deg C × 10 ⁻⁵	Material ^a	in/in/deg F × 10 ⁻⁵	cm/cm/deg C × 10 ⁻⁵
Liquid Crystal—GR	0.3	0.6	ABS—GR	1.7	3.1
Glass	0.4	0.7	Polypropylene—GR	1.8	3.2
Steel	0.6	1.1	Epoxy—GR	2.0	3.6
Concrete	0.8	1.4	Polyphenylene sulfide—GR	2.0	3.6
Copper	0.9	1.6	Acetal—GR	2.2	4.0
Bronze	1.0	1.8	Epoxy	3.0	5.4
Brass	1.0	1.8	Polycarbonate	3.6	6.5
Aluminum	1.2	2.2	Acrylic	3.8	6.8
Polycarbonate—GR	1.2	2.2	ABS	4.0	7.2
Nylon—GR	1.3	2.3	Nylon	4.5	8.1
TP polyester—GR	1.4	2.5	Acetal	4.8	8.5
Magnesium	1.4	2.5	Polypropylene	4.8	8.6
Zinc	1.7	3.1	TP Polyester	6.9	12.4
ABS—GR	1.7	3.1	Polyethylene	7.2	13.0

^aGR = Typical glass fiber-reinforced material. Other plastics materials shown are unfilled.

Table 9. Linear Expansion of Various Substances between 32 and 212°F
Expansion of Volume = 3 × Linear Expansion

Substance	Linear Expansion		Substance	Linear Expansion	
	for 1°F	for 1°C		for 1°F	for 1°C
Brick	0.000030	0.000054	Masonry, brick from	0.000026	0.000047
Cement, Portland	0.000066	0.000108	to	0.000050	0.000090
Concrete	0.000080	0.000144	Plaster	0.000092	0.000166
Ebonite	0.000428	0.000770	Porcelain	0.000020	0.000036
Glass, thermometer	0.000050	0.000090	Quartz, from	0.000043	0.000077
Glass, hard	0.000040	0.000072	to	0.000079	0.000142
Granite	0.000044	0.000079	Slate	0.000058	0.000104
Marble, from	0.000031	0.000056	Sandstone	0.000065	0.000117

6. 목차 중에서 **Machinery Handbook (31st Edition)** 의 '**3. Properties, Treatment, and Testing of Materials**' 를 클릭 후 이동한 서적원문임
7. 해당 서적원문은 Knovel 서버에서 제공하며 이용자가 직접 컴퓨터에서 활용 가능하므로, Knovel과 계약된 기술서적이나 핸드북은 **개정판 발생 시 신규기술정보에 보다 빠르게 접근**할 수 있음
8. 다음 장에서 서적원문 화면에서 메뉴의 기능에 대해 설명

Knovel Resource - Book



Machinery's Handbook, 31st Edition
372 THERMAL PROPERTIES OF MATERIALS

Table 8. Typical Values of Coefficient of Linear Thermal Expansion for Thermoplastics and Other Commonly Used Materials

Material*	in/in/deg F × 10 ⁻⁵	cm/cm/deg C × 10 ⁻⁵	Material*	in/in/deg F × 10 ⁻⁵	cm/cm/deg C × 10 ⁻⁵
Liquid Crystal—GR	0.3	0.6	ABS—GR	1.7	3.1
Glass	0.4	0.7	Polypropylene—GR	1.8	3.2
Steel	0.6	1.1	Epoxy—GR	2.0	3.6
Concrete	0.8	1.4	Polyphenylene sulfide—GR	2.0	3.6
Copper	0.9	1.6	Acetal—GR	2.2	4.0
Bronze	1.0	1.8	Epoxy	3.0	5.4
Brass	1.0	1.8	Polycarbonate	3.6	6.5
Aluminum	1.2	2.2	Acrylic	3.8	6.8
Polycarbonate—GR	1.2	2.2	ABS	4.0	7.2
Nylon—GR	1.3	2.3	Nylon	4.5	8.1
TP polyester—GR	1.4	2.5	Acetal	4.8	8.5
Magnesium	1.4	2.5	Polypropylene	4.8	8.6
Zinc	1.7	3.1	TP Polyester	6.9	12.4
ABS—GR	1.7	3.1	Polyethylene	7.2	13.0

* GR = Typical glass fiber-reinforced material. Other plastics materials shown are unfilled.

Table 9. Linear Expansion of Various Substances between 32 and 212°F Expansion of Volume = 3 × Linear Expansion

Substance	Linear Expansion		Substance	Linear Expansion	
	for 1°F	for 1°C		for 1°F	for 1°C
Brick	0.000030	0.000054	Masonry, brick from	0.000026	0.000047
Cement, Portland	0.000060	0.000108	to	0.000050	0.000090
Concrete	0.000080	0.000144	Plaster	0.000092	0.000166
Ebonite	0.000428	0.000770	Porcelain	0.000020	0.000036
Glass, thermometer	0.000050	0.000090	Quartz, from	0.000043	0.000077
Glass, hard	0.000040	0.000072	to	0.000079	0.000142
Granite	0.000044	0.000079	Slate	0.000058	0.000104
Marble, from	0.000031	0.000056	Sandstone	0.000065	0.000117

- 1. 사용자 이동경로:** 검색 도구로 사용
- 2. 확장 모드:** 확장된 보기 화면으로 변환됩니다
- 3. Content:** 해당 기술서적 원문 목차를 표시
- 4. Save:** My Knovel에 저장
- 5. Share:** 이메일로 현재 보고있는 기술원문 공유
- 6. Save to Mobile:** 모바일 기기로 저장(My Knovel ToGo)
- 7. Download:** 현재 보고 있는 원문을 PDF 파일로 내려받기
- 8. Print:** 현재 보고 있는 원문을 인쇄
- 9. Citation:** Bibtex, EndNote, Mendeley, ProCite, RefMan, RefWorks 및 Zotero와 같은 다양한 형식의 인용 프로그램으로 내보내기 가능
- 10. 확대/축소**

Knovel Resource - Book



The screenshot shows the Knovel website interface with a book page titled "Machinery's Handbook, 31st Edition" and "THERMAL PROPERTIES OF MATERIALS". The page contains two tables: Table 8, "Typical Values of Coefficient of Linear Thermal Expansion for Thermoplastics and Other Commonly Used Materials", and Table 9, "Linear Expansion of Various Substances between 32 and 212°F Expansion of Volume = 3 × Linear Expansion".

Table 8. Typical Values of Coefficient of Linear Thermal Expansion for Thermoplastics and Other Commonly Used Materials

Material ^a	in/in/deg F × 10 ⁻⁵	cm/cm/deg C × 10 ⁻⁵	Material ^a	in/in/deg F × 10 ⁻⁵	cm/cm/deg C × 10 ⁻⁵
Liquid Crystal—GR	0.3	0.6	ABS—GR	1.7	3.1
Glass	0.4	0.7	Polypropylene—GR	1.8	3.2
Steel	0.6	1.1	Epoxy—GR	2.0	3.6
Concrete	0.8	1.4	Polyphenylene sulfide—GR	2.0	3.6
Copper	0.9	1.6	Acetal—GR	2.2	4.0
Bronze	1.0	1.8	Epoxy	3.0	5.4
Brass	1.0	1.8	Polycarbonate	3.6	6.5
Aluminum	1.2	2.2	Acrylic	3.8	6.8
Polycarbonate—GR	1.2	2.2	ABS	4.0	7.2
Nylon—GR	1.3	2.3	Nylon	4.5	8.1
TP polyester—GR	1.4	2.5	Acetal	4.8	8.5
Magnesium	1.4	2.5	Polypropylene	4.8	8.6
Zinc	1.7	3.1	TP Polyester	6.9	12.4
ABS—GR	1.7	3.1	Polyethylene	7.2	13.0

^a GR = Typical glass fiber-reinforced material. Other plastics materials shown are unfilled.

Table 9. Linear Expansion of Various Substances between 32 and 212°F Expansion of Volume = 3 × Linear Expansion

Substance	Linear Expansion		Substance	Linear Expansion	
	for 1°F	for 1°C		for 1°F	for 1°C
Brick	0.000030	0.000054	Masonry, brick from to	0.000026	0.000047
Cement, Portland	0.000060	0.000108	Plaster	0.000092	0.000166
Concrete	0.000080	0.000144	Porcelain	0.000020	0.000036
Ebonite	0.000428	0.000770	Quartz, from to	0.000043	0.000077
Glass, thermometer	0.000050	0.000090	Slate	0.000079	0.000142
Glass, hard	0.000040	0.000072	Sandstone	0.000058	0.000104
Granite	0.000044	0.000079			
Marble, from	0.000031	0.000056			

- 11. **Sticky Header:** 메뉴 자동숨김 해제
- 12. **Screen Reader:** 원문을 PDF 보기형식으로 전환
- 13. **Add Note:** 메모 추가 또는 텍스트 하이라이트 표시
- 14. **Search:** 현재 검색어를 지우고 새용어를 검색
- 15. **이전 / 다음 페이지**
- 16. **Short Cut:** Knovel 원문보기에서 지원되는 단축 키 표시

Knovel Resource – Chapter (Trapezoidal Thread)



The screenshot shows the Knovel website interface. At the top, the Knovel logo is on the left, and 'Support Center' and 'Welcome Key Lee' are on the right. Below the header, there's a navigation bar with 'Engineering Data and Technical References to Solve Engineering Problems' and 'This Knovel subscription provided by Knovel'. The main search area has a search bar with 'trapezoidal' entered. A dropdown menu is open, showing 'KEYWORDS' with two suggestions: 'trapezoidal rule' and 'trapezoidal metric thread'. The second suggestion is highlighted with a red box. Below the search bar, there are several content cards for 'Property Table Data', 'Equations', and 'Unit Converter'. A vertical 'Feedback / Improve Knovel' button is on the right side.

1. 사다리꼴 나사 (Trapezoidal Thread)의 규격을 찾고자 함
2. 시작페이지의 기본검색창에서 Trapezoidal 입력 후 추천 키워드 인 'Trapezoidal metric thread'를 클릭하여 검색 수행

Knovel Resource - Chapter



Knovel® Support Center Welcome Key Lee

Home > Search : trapezoidal metric thread

trapezoidal metric thread

Share Search Query Save Search Query Tutorial Video

Include Synonyms Advanced Search

Sort By Relevancy

Include out of subscription results

5 Results

Trapezoidal Metric Thread Save

CHAPTER • From Machinery's Handbook (26th Edition) (2000) > Threads and Threading > Metric Screw Threads

Trapezoidal Metric Thread Preferred Basic Sizes (DIN 103) All dimensions are in millimeters. *Roots are rounded to a radius, r, equal to 0.25 mm for pitches of from 3 to 12 mm inclusive and 0.5 mm for pitches of from 14 to 26 ... More

9.4.3 Trapezoidal Metric Thread Save

CHAPTER • From Machinery's Handbook (31st Edition) (2020) > 9. Threads and Threading > 9.4 Metric Screw Threads

Trapezoidal Metric Thread

Other Editions

External Links
Compendex from Engineering Village

View abstracts in Compendex on
Engineering Village

Journals	Conferences	Standards
Synergistic effects of implant macrogeometry and surface ...	DESIGNING ROLLS FOR THREAD-ROLLING HEADS.	
Bergamo, Edmara ...	Grudov, A.A.; Komarov, P.N.;	
(2019) Journal of Long-Term ...	(1980) Machines & ...	

3. 금회 검색결과는 보다 세밀한 주제분야에 대한 검색이므로 많은 검색결과가 나타나지 않음
4. 검색결과 좌측에 **Chapter** 표시는 서적본문 내에서 **'Trapezoidal Metric Tread'**가 포함된 장(章)임
5. 검색결과 중 **'Machinery Handbook (31st Edition) (2021)'**에서 검색된 **'9.4.3 Trapezoidal Metric Tread'** 를 클릭하면 해당 장(章)으로 바로 이동

Knovel Resource - Chapter



Knovel Search Knovel Support Center Welcome Key Lee

Home > Search: trapezoidal metric thread > Machinery's Handbook (31st Edition) > 9.4.3 Trapezoidal Metric Thread

Content Save Share Save to Mobile Download Print Citations Hide Header Screen Reader Add Note View Notes trapezoidal metric x

Trapezoidal Metric Thread

Comparison of ISO and DIN Standards.—ISO metric trapezoidal screw threads standard, ISO 2904-1977, describes the system of general purpose metric threads for use in mechanisms and structures. The standard is in basic agreement with trapezoidal metric thread DIN 103. The DIN 103 standard applies a particular pitch for a particular diameter of thread, but the ISO standard applies a variety of pitches for a particular diameter. In ISO 2904-1977, the same clearance is applied to both the major diameter and minor diameter, but in DIN 103 the clearance in the minor diameter is two or three times greater than clearance in the major diameter. A comparison of DIN 103 is given in Table 1.

Copyright 2020, Industrial Press, Inc. ebooks.industrialpress.com

Machinery's Handbook, 31st Edition
TRAPEZOIDAL METRIC THREAD

Metric Trapezoidal Thread, ISO 2904

Terminology: The term "bolt threads" is used for external screw threads, the term "nut threads" for internal screw threads.

Calculation: The values given in the International standards have been calculated by using the following formulas:

$$H_1 = 0.5P \quad H_2 = H_1 + a_c = 0.5P + a_c \quad H_3 = H_1 + a_c = 0.5P + a_c$$

$$D_1 = d + 2a_c \quad Z = 0.25P = H_1/2 \quad D_2 = d - 2H_1 = d - P$$

$$D_3 = D - 2b_1 \quad d_1 = D_2 = d - 2Z = d - 0.5P \quad R_{\text{max}} = 0.5a_c \quad R_{\text{min}} = a_c$$

where a_c = clearance on the crest; D = major diameter for nut threads; D_2 = pitch diameter

Did this help you?
Yes
No

3. 검색결과 중 'Machinery Handbook (31st Edition) (2021)'에서 검색된 '9.4.3 Trapezoidal Metric Tread' 를 클릭하면 Book으로 표시된 검색결과와 다르게 목차와 도서정보가 아닌 원문으로 바로 이동됨
4. 검색결과 중 Chapter로 원문에 바로 이동한 경우의 장점은 필요한 자료를 찾기 위해 서적제목이나, 기타정보로 추론해서 서적을 찾고, 일일이 페이지를 넘기는 수고대신 원하는 정보가 있는 페이지로 곧장 이동되므로 보다 정확하고, 빠른 검색을 수행할 수 있음

Knovel Resource - Chapter



Knovel® Search Knovel Support Center Welcome Key Lee

Home > Search : trapezoidal metric thread > Machinery's Handbook (31st Edition) > 9.4.3 Trapezoidal Metric Thread

Content Save Share Save to Mobile Download Print Citations Hide Header Screen Reader Add Note View Notes trapezoidal metric x

Trapezoidal Metric Thread

Comparison of ISO and DIN Standards.—ISO metric trapezoidal screw threads standard, ISO 2904-1977, describes the system of general purpose metric threads for use in mechanisms and structures. The standard is in basic agreement with trapezoidal metric thread DIN 103. The DIN 103 standard applies a particular pitch for a particular diameter of thread, but the ISO standard applies a variety of pitches for a particular diameter. In ISO 2904-1977, the same clearance is applied to both the major diameter and minor diameter, but in DIN 103 the clearance in the minor diameter is two or three times greater than clearance in the major diameter. A comparison of DIN 103 is given in Table 1.

Copyright 2020, Industrial Press, Inc. ebooks.industrialpress.com

2038 **Machinery's Handbook 31st Edition**
TRAPEZOIDAL METRIC THREAD

Metric Trapezoidal Thread, ISO 2904

Terminology: The term "bolt threads" is used for external screw threads, the term "nut threads" for internal screw threads.

Calculation: The values given in the International standards have been calculated by using the following formulas:

$$H_1 = 0.5P \quad H_2 = H_1 + a_c = 0.5P + a_c \quad H_3 = H_1 + a_c = 0.5P + a_c$$

$$D_1 = d + 2a_c \quad Z = 0.25P = H_1/2 \quad D_2 = d - 2H_1 = d - p$$

$$D_3 = D - 2h_2 \quad d_2 = D_2 = d - 2Z = d - 0.5P \quad R_{\text{max}} = 0.5a_c \quad R_{\text{min}} = a_c$$

where a_c = clearance on the crest; D = major diameter for nut threads; D_2 = pitch diameter

Did this help you?
Yes
No

- 해당 장(章)에 제공되는 **나사선 두께, 피치 직경, 너트 직경, 여유고 등의 계산공식**을 통해 규격 및 설계에 대한 이해와 실무적용이 가능해짐
- 검색된 키워드는 전체 장(章)에 하이라이트로 표시, 화면 우측 상단에 키워드를 검색창을 통해 빠르게 이동 가능
- 사용방법과 메뉴는 **'Knovel Resource – Book'**에서 설명한 방법과 동일

Knovel Resource - Chapter



Knovel® Knovel 검색 지원 센터 환영합니다 키리

홈 > 검색: 사다리꼴 미터 나사 > 기계 핸드북(31판) > 9.4.3 사다리꼴 미터 나사

Save to My Knovel

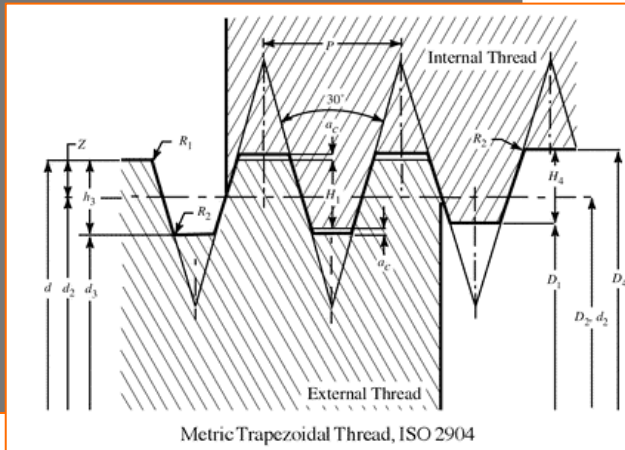
부동산 검색 마이노블 내폴더 검색 부식 데이터 방정식 단위변환기 더많은 도구

trapezoidal metric

목사기 추가를 위해

Comparison of ISO and DIN Standards.—ISO metric trapezoidal screw threads standard, ISO 2904:1977, describes the system of general purpose metric threads for use in mechanisms and structures. The standard is in basic agreement with trapezoidal metric thread DIN 103. The DIN 103 standard applies a particular pitch for a particular diameter of thread, but the ISO standard applies a variety of pitches for a particular diameter. In ISO 2904:1977, the same clearance is applied to both the major diameter and minor diameter, but in DIN 103 the clearance in the minor diameter is two or three times greater than clearance in the major diameter. A comparison of DIN 103 is given in Table 1.

이나요 도움들?



트레페조이드 나사

사다리꼴 미터 나사

ISO 및 DIN 표준 비교 - ISO 미터법 사다리꼴 나사산 표준, ISO2904-1977은 메커니즘 및 구조에 사용하기 위한 범용 미터법 나사산 시스템을 설명합니다. 이 표준은 사다리꼴 미터 나사 DIN103과 기본적으로 일치합니다. DIN 103 표준은 나사산의 특정 직경에 대해 특정 피치를 적용하지만 ISO 표준은 특정 직경에 대해 다양한 피치를 적용합니다. ISO 2904-1977에서는 장경과 부직경 모두에 동일한 간극이 적용되지만 DIN 103에서는 부직경의 간극이 장경의 간극보다 2~3배 더 큼니다. DIN 103의 비교는 표 1에 나와 있습니다.

sadalikkol miteo nassa
ISO mich DIN pyojun bigyo - ISO miteobeob sadalikkol nasasan pyojun, ISO2904-1977eum mekeonjeum mich gujo-e sayonghagi wihan beom-yong miteobeob nasasan siseutem-
jaseon

714 / 5,000

8. 검색결과가 제공되는 Knovel의 서적본문보기는 Google Chrome을 이용하여 해당 메뉴는 웹사이트 상에서 번역이 가능함 (기술용어 번역상 일부 오역존재)
9. 제공되는 본문의 경우 웹사이트 상에서는 번역이 되지 않지만, 본문 복사(Copy)기능의 활용과 Google 번역 등을 이용하여 본문의 내용을 이해할 수 있음
10. 본문의 그림도 Print Screen 등의 도구를 이용하여 캡처가 가능하며, 쉽게 활용할 수 있음

Property Search

Knovel Property Search - 물성검색



The screenshot displays the Knovel Property Search interface. The top navigation bar includes 'Knovel', 'Support Center', and 'Welcome Key Lee'. The main header reads 'Engineering Data and Technical References to Solve Engineering Problems'. The left sidebar contains navigation options: 'Property Search' (highlighted), 'My Knovel', 'My Folder', 'Browse', 'Corrosion Data', 'Equations', 'Unit Converter', and 'More Tools'. The main content area features two tabs: 'SEARCH KNOVEL' and 'PROPERTY SEARCH' (selected). Below the tabs is a search bar with a dropdown menu set to 'All' and the search term 'author: yaws'. There are also options for 'Include Synonyms' and 'Advanced Search'. Below the search bar are four feature cards: 'Material Property Search', 'Interactive Graphs', 'Property Table Data', and 'Equations'. At the bottom, there are sections for 'Recent Activity', 'Explore Renewable Energy', and 'Solve Equations'.

1. <https://app.knovel.com>에 접속한 후 왼쪽 첫번째 메뉴 또는 검색창 위의 두번째 탭에 표시된 'Property Search'를 클릭하면 다양한 재료의 물성정보를 검색할 수 있음

Knovel Property Search - 물성검색



Knovel offers following tools to help you find materials and properties data

Material Property Search
Also known as Data Search, find materials and properties information from technical references.

Knovel Data Analytics
Visual and interactive search of NIST pure compounds database for chemicals and their properties.

[Open Material Property Search >](#)

[Open Chemical Materials Search >](#)

Property Table Data
Support to your precise needs.

Equations
Solve for any variable, hundreds of equations, every discipline.

[See an Example >](#) [Intro Video >](#) [Browse Equations >](#)

Solve Equations

2. 왼쪽 첫번째 메뉴를 클릭하면 나타나는 화면에서 'Open Material Property Search' 버튼을 클릭하면 물성정보 검색쿼리로 이동

Knovel Property Search - 물성검색



Knovel
Engineering Data and Technical References to Solve Engineering Problems

Support Center | Welcome Key Lee

This Knovel subscription provided by Knovel San Antonio

SEARCH KNOVEL | **PROPERTY SEARCH** | Tutorial Video

Knovel offers following tools to help you find materials and properties data

Material Property Search
Also known as Data Search, find materials and properties Information from technical references.
Open Material Property Search >

Knovel Data Analytics
Visual and interactive search of NIST pure compounds database for chemicals and their properties.
Open Chemical Materials Search >

Material Property Search
Build a precision query across hundreds of properties.

Interactive Graphs
Digitized for you to interpolate, or fully equation-based curves.

Property Table Data
Filter and sort to your precise needs.

Equations
Solve for any variable, hundreds of equations, every discipline.

Feedback / Improve Knovel

3. 검색창 위의 두번째 탭을 클릭하면 나타나는 화면에서 'Open Material Property Search' 버튼을 클릭해도 물성정보 검색쿼리로 이동가능

Knovel Property Search - 물성검색



Knovel

Search Knovel

Support Center

Welcome Key Lee

Home > Material Property Search

Material Property Search

MATERIAL OR SUBSTANCE NAME: H2SO4

Filter by Property Name

+ Expand all

- Chemical Properties
- Dimensional Properties
- Electrical Properties
- Electrochemical Properties
- Energy And Power
- Environmental Characteristics
- Fiber Properties
- Food And Nutrition
- Geography

Drag and Drop Properties Here

Items dropped here will be added to your query.
As you build your property search, your result count will appear here.

Feedback

4. 'Open Material Property Search' 를 클릭한 후에 이동한 물성정보 검색쿼리임
5. 좌측 Material or Substance Name 창에 재료명을 입력하면 다양한 물성정보를 확인가능
6. 우측에 위치한 Find a property 창에서 찾고자하는 물성치를 직접 입력
7. Property Search의 메뉴의 자세한 기능은 다음 장에서 언급

Knovel Property Search - 물성검색



1. **물질명:** 특정 물질명을 입력
2. **URL 공유:** 이메일을 통해 검색을 공유
3. **My Knovel에 저장:** 개인계정에 저장
4. **Video:** 튜토리얼 비디오
5. **물성 필터링:** 재료물성을 입력 (예: 밀도)
6. **끌어내기:** 원하는 물성을 끌어내기해서 검색완료
7. **검색결과:** 클릭하면 검색된 내용 확인가능

재료명 입력방식

- 재료명 : titanium(티타늄), carbon(탄소), sulfuric acid (황산) 등
- CAS 등록 번호 : 71-43-2, 7440-38-3, 등
- 분자식 : c6h6, h2s04 등
- UNS 번호 : R56400, H40270 등
- ASTM 규격 : SA-182, SA-387 등

물성치

- 'AND', 'OR' 및 'NOT' 사용 최대 3 개의 속성 결합 가능
- Knovel은 숫자 값이나 숫자 범위가 입력 가능
- 메뉴창에서 측정 단위를 선택가능 (예, 온도 단위 F, C, K 등)

Knovel Property Search - 물성검색



Knovel

Search Knovel

Support Center Welcome Key Lee

Home > Material Property Search

Material Property Search

Knovel's material property search engine finds numeric data hidden in handbooks, manuals, and databases. There are thousands of materials and substances (metals, polymers, ceramics, chemicals, etc.) and more than 100 properties (physical, thermodynamic, electrical, corrosion, toxicity, etc.) to search.

Share Material Property Search Save to My Knovel Tutorial Video

MATERIAL OR SUBSTANCE NAME aluminium alloy

Find any property

Collapse all

- chemical properties
 - atomic and molecular properties
 - molecular weight
 - degradation properties
 - weight change
 - weight loss (mass per area)
 - dimensional properties
 - angle
 - area
 - depth
 - diameter
 - distance

Drag and Drop Up to 3 Properties Here

Watch a quick tutorial

2032 Table/Graph Results >

Material Property Search

Click to find out more

Feedback / Improve Knovel

7. 좌측 **Material or Substance Name** 창에 재료명을 **Aluminum Alloy**를 입력
8. 하단에 재료명 **Aluminum Alloy**에 관하여 2,032건의 검색결과 확인

Knovel Property Search - 물성검색



The screenshot shows the Knovel Material Property Search interface. The search bar contains 'aluminum alloy'. A filter dropdown is set to 'shear yield strength' with the operator 'exists'. A blue box highlights '19 Results'. The right sidebar shows a list of mechanical properties, with 'allowable stress' highlighted in a red box. A red arrow points from the '19 Results' box to the 'allowable stress' item.

9. Aluminum Alloy의 항복전단강도가 확인하기 위해 Filter by Property Name창에 Shear Yield Strength를 검색
10. 물성정보는 자동완성기능으로 쉽게 물성명을 검색가능
11. 검색된 물성치를 좌측으로 Drag 하면 해당 물성치에 대한 재검색을 수행
12. 19개의 검색결과가 나온 파란색 박스를 클릭함

Knovel Property Search - 물성검색



Knovel[®] Support Center Welcome Key Lee

Home > Material Property Search > Search for: material_or_substance_name: aluminum alloy AND shear_yield_strength_mf[* TO *]

material_or_substance_name: aluminum alloy AND shear_yield_strength_mf[* TO *]

Share Search Query Save Search Query Tutorial Video

< Back to Property Search

FILTER BY

Content Type Apply >

Table (19)

External Links
Compendex from Engineering Village

19 Results Sort By Relevancy

Include out of subscription results

Table 9b. Estimated Minimum Mechanical Properties of Wrought Aluminum alloys (Metric units) Save

TABLE • From Aluminum Alloy Database

View Full Table Preview - 1 of 1187 records. Full table shows more columns and functions.

Miscellaneous Alloys and Hybrid Materials -- Design Mechanical Properties Save

TABLE • From Metallic Materials Properties Development and Standardization (MMPDS-11)

View Full Table Preview - 1 of 8 records. Full table shows more columns and functions.

alloy type	alloy name	specification	form	condition or temper	basis	thickness	width	F _{tu} ultimate tensile stress @ RT	F _{ty} tensile yield stress @ RT	F _{cy} compressive yield stress @ RT	F _{su} ultimate shear stress @ RT
Aluminum Alloy	2024-T3	AMS 4254 ^e	Aramid fiber reinforced sheet	2/1 Layup	S	0.032 - 0.033	-	90(L); 48(LT)	48(L); 33(LT)	35(L); 33(LT)	-

Feedback / Improve Knovel

13. 검색결과 Tables(표) 19건이 검색

14. 검색결과 중 'Metallic Materials Properties Development and Standardization (MMPDS-08)'에서 검색된 'Miscellaneous Alloys and Hybrid Materials – Design Mechanical Properties' 의 제목을 클릭

Knovel Property Search - 물성검색



Knovel

Search Knovel

Support Center Welcome Key Lee

Home > Search f...*TO*] > Metallic...MPDS-11] > Miscellaneous Alloys and Hybrid Materials -- Design Mechanical Properties

Miscellaneous Alloys and Hybrid Materials -- Design Mechanical Properties

Contents Save Download / Export Citation Unit Converter

Unit Conversion BETA material_or_substance

Rows 1 - 8 of 8 from 138

alloy type	alloy name	specification	form	condition or temper	basis	thickness (in)	width (in)	F _{tu} ultimate tensile stress @ RT (ksi)	F _{ty} tensile yield stress @ RT (ksi)	F _{cy} compressive yield stress @ RT (ksi)	F _{su} ultimate shear stress @ RT (ksi)	F _{sy} shear yield stress @ RT (ksi)	F _{bu} ultimate bearing stress (e/D = 2.0) @ RT (ksi)	F _{bu} ultimate bearing stress (e/D = 1.5) @ RT (ksi)	F _{by} bearing yield stress (e/D = 2.0) @ RT (ksi)	F _{by} bearing yield stress (e/D = 1.5) @ RT (ksi)	table no.	physical properties	el
Aluminum Alloy Sheet Laminates	2024-T3 Aramid Fiber Reinforced Sheet Laminates	AMS 4254*	Aramid fiber reinforced sheet laminate	2/1 Layup	S	0.032 - 0.033		90(L); 48(LT)	48(L); 33(LT)	35(L); 33(LT)		16*	9(L); 9(LT) ^o	78(L); 89(LT) ^o	63(L); 66(LT) ^o	53(L); 56(LT) ^o	7.5.1.0(b)	Physical	Elor
Aluminum Alloy Sheet Laminates	2024-T3 Aramid Fiber Reinforced Sheet Laminates	AMS 4254*	Aramid fiber reinforced sheet laminate	3/2 Layup	S	0.053 - 0.054		96(L); 44(LT)	49(L); 30(LT)	35(L); 30(LT)		15*	8(L); 8(LT) ^o	73(L); 84(LT) ^o	63(L); 61(LT) ^o	52(L); 52(LT) ^o	7.5.1.0(b)	Physical	Elor
Aluminum Alloy Sheet Laminates	2024-T3 Aramid Fiber Reinforced Sheet Laminates	AMS 4254*	Aramid fiber reinforced sheet laminate	4/3 Layup	S	0.074 - 0.075		101(L); 43(LT)	49(L); 30(LT)	34(L); 30(LT)		14*	8(L); 8(LT) ^o	73(L); 80(LT) ^o	61(L); 61(LT) ^o	51(L); 52(LT) ^o	7.5.1.0(b)	Physical	Elor
Aluminum Alloy Sheet Laminates	2024-T3 Aramid Fiber Reinforced Sheet Laminates	AMS 4254*	Aramid fiber reinforced sheet laminate	5/4 Layup	S	0.094 - 0.095		101(L); 42(LT)	49(L); 30(LT)	33(L); 30(LT)		14*	7(L); 7(LT) ^o	68(L); 75(LT) ^o	59(L); 60(LT) ^o	50(L); 52(LT) ^o	7.5.1.0(b)	Physical	Elor
Aluminum Alloy Sheet Laminates	7475-T761 Aramid Fiber Reinforced Sheet Laminates	AMS 4302	Aramid fiber reinforced sheet laminate	2/1 Layup	S	0.032 - 0.033		103(L); 56(LT)	76(L); 48(LT)	46(L); 51(LT)	35*	24*	14(L); 14(LT) ^o	91(L); 96(LT) ^o	83(L); 84(LT) ^o	73(L); 76(LT) ^o	7.5.2.0(b)	Physical	Elor
	7475-T761 Aramid fiber																		

15. 'Metallic Materials Properties Development and Standardization (MMPDS-08)'에서 검색된 'Miscellaneous Alloys and Hybrid Materials – Design Mechanical Properties' 를 클릭한 결과임

16. 오렌지색으로 표시된 내용이 검색한 재료명과 물성치임

17. 화면에 표시된 메뉴의 기능은 다음 장에서 언급

Knovel Property Search - 물성검색



The screenshot shows the Knovel Property Search interface. At the top, there is a search bar and navigation options. The main content area displays a table of material properties for 'Miscellaneous Alloys and Hybrid Materials Design Mechanical Properties'. The table has columns for alloy type, alloy name, specification, form, condition, basis, thickness, width, and various mechanical properties like ultimate tensile stress, yield stress, compressive yield stress, ultimate shear stress, and shear yield stress. The table is filtered to show 8 rows out of 138. The interface also includes a sidebar with navigation options like 'Property Search', 'My Knovel', 'My Folder', 'Browse', 'Corrosion Data', 'Equations', 'Unit Converter', and 'More Tools'.

alloy type	alloy name	specification	form	condition or temper	basis	thickness (in)	width (in)	F _{tu} ultimate tensile stress @ RT (ksi)	F _{ty} tensile yield stress @ RT (ksi)	F _{cy} compressive yield stress @ RT (ksi)	F _{su} ultimate shear stress @ RT (ksi)	F _{sy} shear yield stress @ RT (ksi)	F _{btu} ultimate bearing stress (e/D = 2.0) @ RT (ksi)	F _{bty} ultimate bearing stress (e/D = 1.5) @ RT (ksi)	F _{bty} bearing yield stress (e/D = 2.0) @ RT (ksi)	F _{bty} bearing yield stress (e/D = 1.5) @ RT (ksi)	table no.	physical properties	el
Aluminum Alloy Sheet Laminates	2024-T3 Aramid Fiber Reinforced Sheet Laminate	AMS 4254*	Aramid fiber reinforced sheet laminate	2/1 Layup	S	0.032 - 0.033	90(L); 48(LT)	48(L); 33(LT)	35(L); 33(LT)	16*	93(L); 95(LT)*	78(L); 89(LT)*	63(L); 66(LT)*	53(L); 56(LT)*	7.5.1.0(b)	Physical	Elor		
Aluminum Alloy Sheet Laminates	2024-T3 Aramid Fiber Reinforced Sheet Laminate	AMS 4254*	Aramid fiber reinforced sheet laminate	3/2 Layup	S	0.053 - 0.054	96(L); 44(LT)	49(L); 30(LT)	35(L); 30(LT)	15*	86(L); 89(LT)*	73(L); 84(LT)*	63(L); 61(LT)*	52(L); 52(LT)*	7.5.1.0(b)	Physical	Elor		
Aluminum Alloy Sheet Laminates	2024-T3 Aramid Fiber Reinforced Sheet Laminate	AMS 4254*	Aramid fiber reinforced sheet laminate	4/3 Layup	S	0.074 - 0.075	101(L); 43(LT)	49(L); 30(LT)	34(L); 30(LT)	14*	83(L); 81(LT)*	73(L); 80(LT)*	61(L); 61(LT)*	51(L); 52(LT)*	7.5.1.0(b)	Physical	Elor		
Aluminum Alloy Sheet Laminates	2024-T3 Aramid Fiber Reinforced Sheet Laminate	AMS 4254*	Aramid fiber reinforced sheet laminate	5/4 Layup	S	0.094 - 0.095	101(L); 42(LT)	49(L); 30(LT)	33(L); 30(LT)	14*	77(L); 76(LT)*	68(L); 75(LT)*	59(L); 60(LT)*	50(L); 52(LT)*	7.5.1.0(b)	Physical	Elor		
Aluminum Alloy Sheet Laminates	7475-T761 Aramid Fiber Reinforced Sheet Laminate	AMS 4302	Aramid fiber reinforced sheet laminate	2/1 Layup	S	0.032 - 0.033	103(L); 56(LT)	76(L); 48(LT)	46(L); 51(LT)	35*	24*	104(L); 108(LT)*	91(L); 96(LT)*	83(L); 84(LT)*	73(L); 76(LT)*	7.5.2.0(b)	Physical	Elor	

1. 사용자 이동경로: 검색 도구로 사용
2. 확장 모드: 확장된 보기 화면으로 변환됩니다
3. Content: 해당 기술서적 원문 목차를 표시
4. Save: 개인계정에 저장
5. Export: 현재의 표를 PDF나 Excel 파일로 내려받기
6. Citation: Mendeley와 같은 다양한 형식의 인용 프로그램으로 내보내기 가능

7. Unit Converter: 단위변환기
8. Unit Conversion: 자동단위변환(베타서비스)
9. Search: 검색키워드 확인
10. Filter: 오름차순 정렬, 내림차순 정렬 및 필터링과 원하지 않는 열 제거 가능

Knovel Property Search - 물성검색



Knovel Search Knovel Support Center Welcome Key Lee

Home > Search f...*TO* > Metallic...MPDS-11 > Miscellaneous Alloys and Hybrid Materials -- Design Mechanical Properties

Miscellaneous Alloys and Hybrid Materials -- Design Mechanical Properties

Downloads only displayed rows, up to 50. To download more, view the respective page.

PDF
Microsoft Excel
Comma Separated Value [CSV]

Unit Conversion BETA (1) material_or_substance

Rows 1 - 8 of 8 from 138

alloy type	alloy name	alloy	basis	thickness (in)	width (in)	F _{tu} ultimate tensile stress @ RT (ksi)	F _{ty} tensile yield stress @ RT (ksi)	F _{cy} compressive yield stress @ RT (ksi)	F _{su} ultimate shear stress @ RT (ksi)	F _{sy} shear yield stress @ RT (ksi)	F _{bu} ultimate bearing stress (e/D = 2.0) @ RT (ksi)	F _{bu} ultimate bearing stress (e/D = 1.5) @ RT (ksi)	F _{by} bearing yield stress (e/D = 2.0) @ RT (ksi)	F _{by} bearing yield stress (e/D = 1.5) @ RT (ksi)	table no.	physical properties	el	
<input type="checkbox"/>	Aluminum Alloy Sheet Laminates	2024-T3 Aramid Fiber Reinforced Sheet Laminate AMS 4254*	Aramid fiber reinforced sheet laminate	2/1 Layup	S	0.032 - 0.033	90(L); 48(LT)	48(L); 33(LT)	35(L); 33(LT)	16*	93(L); 95(LT) ^a	78(L); 89(LT) ^a	63(L); 66(LT) ^a	53(L); 56(LT) ^a	7.5.1.0(b)	Physical	Elor	
<input type="checkbox"/>	Aluminum Alloy Sheet Laminates	2024-T3 Aramid Fiber Reinforced Sheet Laminate AMS 4254*	Aramid fiber reinforced sheet laminate	3/2 Layup	S	0.053 - 0.054	96(L); 44(LT)	49(L); 30(LT)	35(L); 30(LT)	15*	86(L); 89(LT) ^a	73(L); 84(LT) ^a	63(L); 61(LT) ^a	52(L); 52(LT) ^a	7.5.1.0(b)	Physical	Elor	
<input type="checkbox"/>	Aluminum Alloy Sheet Laminates	2024-T3 Aramid Fiber Reinforced Sheet Laminate AMS 4254*	Aramid fiber reinforced sheet laminate	4/3 Layup	S	0.074 - 0.075	101(L); 43(LT)	49(L); 30(LT)	34(L); 30(LT)	14*	83(L); 81(LT) ^a	73(L); 80(LT) ^a	61(L); 61(LT) ^a	51(L); 52(LT) ^a	7.5.1.0(b)	Physical	Elor	
<input type="checkbox"/>	Aluminum Alloy Sheet Laminates	2024-T3 Aramid Fiber Reinforced Sheet Laminate AMS 4254*	Aramid fiber reinforced sheet laminate	5/4 Layup	S	0.094 - 0.095	101(L); 42(LT)	49(L); 30(LT)	33(L); 30(LT)	14*	77(L); 76(LT) ^a	68(L); 75(LT) ^a	59(L); 60(LT) ^a	50(L); 52(LT) ^a	7.5.1.0(b)	Physical	Elor	
<input type="checkbox"/>	Aluminum Alloy Sheet Laminates	7475-T761 Aramid Fiber Reinforced Sheet Laminate AMS 4302	Aramid fiber reinforced sheet laminate	2/1 Layup	S	0.032 - 0.033	103(L); 56(LT)	76(L); 48(LT)	46(L); 51(LT)	35*	24*	104(L); 108(LT) ^b	91(L); 96(LT) ^b	83(L); 84(LT) ^b	73(L); 76(LT) ^b	7.5.2.0(b)	Physical	Elor
<input type="checkbox"/>	Aluminum Alloy Sheet Laminates	7475-T761 Aramid Fiber Reinforced Sheet Laminate AMS 4302	Aramid fiber reinforced sheet laminate	2/1 Layup	S	0.032 - 0.033	103(L); 56(LT)	76(L); 48(LT)	46(L); 51(LT)	35*	24*	104(L); 108(LT) ^b	91(L); 96(LT) ^b	83(L); 84(LT) ^b	73(L); 76(LT) ^b	7.5.2.0(b)	Physical	Elor

18. **Export** 메뉴를 클릭하면 제공되는 표를 PDF, Excel 및 CSV 파일로 내려받기가 가능
19. 각각의 열 상단에 역삼각형을 클릭하면 오름차순 정렬, 내림차순 정렬 및 필터링과 원하지 않는 열 제거 가능하며, 변경사항은 내려받기한 파일에도 적용됨
20. 주의사항은 일부 원본서적 내 표는 이러한 형태로 변환되지 않은 경우가 있으므로, 기본검색 후 원본내용을 확인하면 보다 많은 내용을 찾을 수 있음

Knovel Property Search - 물성검색



Excel spreadsheet showing search results for metallic materials properties. The spreadsheet includes a table with columns for alloy name, specification, form, condition, thickness, width, and various mechanical properties like tensile strength and shear yield stress. A bar chart is also present, showing shear yield stress (F_{sy}) in ksi for different alloy specifications.

alloy type	alloy name	specification	form	condition	basis	thickness	width (in)	F _{UT}	ultim F _{UT}	tensile F _{UT}	com F _{UT}	ultim F _{UT}	shear yield stress	F _{UT}	ultim F _{UT}	ultim F _{UT}	bear F _{UT}	bear table no.	physical	elongation	RA
5	Aluminum A2024-T3 Aramid Fiber Rein	AMS 4254*	Aramid fiber 2/1 Layup	S		0.032 - 0.033		90(L), 48(L148(L), 33(L135(L), 33(L1T)				16		83(L) ² , 85(L78(L) ² , 89(L63(L) ² , 66(L53(L) ² , 56(L7.5.1.0(b)					Physical	Elongation	
6	Aluminum A2024-T3 Aramid Fiber Rein	AMS 4254*	Aramid fiber 3/2 Layup	S		0.053 - 0.054		96(L), 44(L149(L), 30(L135(L), 30(L1T)				15		86(L) ² , 89(L73(L) ² , 84(L63(L) ² , 61(L52(L) ² , 52(L7.5.1.0(b)					Physical	Elongation	
7	Aluminum A2024-T3 Aramid Fiber Rein	AMS 4254*	Aramid fiber 4/3 Layup	S		0.074 - 0.075		101(L), 43(L149(L), 30(L134(L), 30(L1T)				14		83(L) ² , 81(L73(L) ² , 80(L61(L) ² , 61(L51(L) ² , 52(L7.5.1.0(b)					Physical	Elongation	
8	Aluminum A2024-T3 Aramid Fiber Rein	AMS 4254*	Aramid fiber 5/4 Layup	S		0.094 - 0.095		101(L), 42(L149(L), 30(L133(L), 30(L1T)				14		77(L) ² , 76(L68(L) ² , 75(L59(L) ² , 60(L50(L) ² , 52(L7.5.1.0(b)					Physical	Elongation	
9	Aluminum A7475-T761 Aramid Fiber Rein	AMS 4302	Aramid fiber 2/1 Layup	S		0.032 - 0.033		103(L), 56(L176(L), 48(L146(L), 51(L135*				24		104(L) ² , 10691(L) ² , 96(L83(L) ² , 84(L73(L) ² , 76(L7.5.2.0(b)					Physical	Elongation	
10	Aluminum A7475-T761 Aramid Fiber Rein	AMS 4302	Aramid fiber 3/2 Layup	S		0.053 - 0.054		111(L), 51(L182(L), 43(L146(L), 48(L133*				23		87(L) ² , 88(L83(L) ² , 85(L81(L) ² , 76(L70(L) ² , 69(L7.5.2.0(b)					Physical	Elongation	
11	Aluminum A7475-T761 Aramid Fiber Rein	AMS 4302	Aramid fiber 4/3 Layup	S		0.074 - 0.075		114(L), 50(L182(L), 42(L144(L), 47(L133*				22		88(L) ² , 86(L84(L) ² , 86(L77(L) ² , 75(L66(L) ² , 69(L7.5.2.0(b)					Physical	Elongation	
12	Aluminum A7475-T761 Aramid Fiber Rein	AMS 4302	Aramid fiber 5/4 Layup	S		0.094 - 0.095		116(L), 48(L184(L), 40(L144(L), 45(L132*				21		84(L) ² , 80(L82(L) ² , 80(L79(L) ² , 72(L69(L) ² , 67(L7.5.2.0(b)					Physical	Elongation	

Battelle Memorial Institute

alloy nam F_{sy}, shear yield stress @ RT (ksi)

Alloy Specification	Shear Yield Stress (ksi)
AMS 4254e	17
AMS 4254e	16
AMS 4254e	15
AMS 4254e	15
AMS 4302	24
AMS 4302	23
AMS 4302	22
AMS 4302	21

21. **Export** 기능을 이용하여 표를 Excel로 내려받기한 파일임
22. 내려받기한 표는 다른형태로 활용이 가능하며, 내려받은 결과값을 이용하여 빠르게 그래프 등의 방식으로 변환 및 활용이 가능함

Knovel Graphs

Knovel Graphs - 그래프



The screenshot shows the Knovel website interface. At the top, there is a navigation bar with the Knovel logo, 'Support Center', and 'Welcome Key Lee'. Below this is a header with the text 'Engineering Data and Technical References to Solve Engineering Problems' and 'This Knovel subscription provided by Knovel'. The main content area features a search bar with a dropdown menu set to 'All' and the search term 'aluminium alloy phase*' entered. A red box highlights the search bar. Below the search bar are four main sections: 'Material Property Search', 'Interactive Graphs', 'Property Table Data', and 'Equations'. Each section has a brief description and links for 'Intro Video' and 'Try It Now' or 'See an Example'. At the bottom, there are three large buttons: 'Recent Activity', 'Explore Renewable Energy', and 'Solve Equations'. A vertical 'Feedback / Improve Knovel' button is located on the right side of the page.

1. <https://app.knovel.com>에 접속한 후 검색창에 'Aluminum alloy phase*'를 검색

Knovel Graphs - 그래프



Knovel[®] Support Center Welcome Key Lee

Home > Search for: Aluminum alloy phase

Aluminum alloy phase

Include Synonyms Advanced Search

Share Search Query Save Search Query Tutorial Video

Sort By Relevancy Include out of subscription results

22 Results

Interactive Phase Diagrams and Graphs

GRAPH • From ASM Handbook, Volume 03 - Alloy Phase Diagrams

View List of Graphs Preview - 1 of 30 records. Full table shows more columns and functions.

Interactive Graphs and Phase Diagrams

GRAPH • From Materials Properties Handbook - Titanium Alloys

View List of Graphs Preview - 1 of 2 records. Full table shows more columns and functions.

graph digitizer	material group	alloy designation	uns no.	trade or common name	x-axis label	y-axis label	graph title	text
Open Graph	beta titanium alloys	Ti-13V-11Cr-3Al	R58010	Ti-13-11-3 and B120VCA	Aluminum content, wt%	Temperature, °C	Ti-13V-11Cr-3Al: Phase diagram with variable aluminum content	view text
Open Graph	beta titanium alloys	Ti-13V-11Cr-3Al	R58010	Ti-13-11-3 and B120VCA	Aluminum content, wt%	Temperature, °F	Ti-13V-11Cr-3Al: Phase diagram with variable aluminum content	view text

View List of Graph Preview - 1 of 1 record. Full table shows more columns and functions.

graph digitizer	x-axis label	y-axis label	graph title	text

Feedback / Improve Knovel

2. 검색된 콘텐츠 종류 중 **Graphs**(그래프)를 선택하여 Apply를 클릭
3. 검색결과 중 **'Materials Properties Handbook – Titanium Alloys'**에서 발췌된 **'Interactive Graph and Phase Diagram'**을 클릭하여 이동

Knovel Graphs - 그래프



Knovel[®] Search Knovel Support Center Welcome Key Lee

Home > Search for: Aluminum alloy phase > Materials Propertie...k - Titanium Alloys > Interactive Graphs and Phase Diagrams

Interactive Graphs and Phase Diagrams Tutorial Video Info

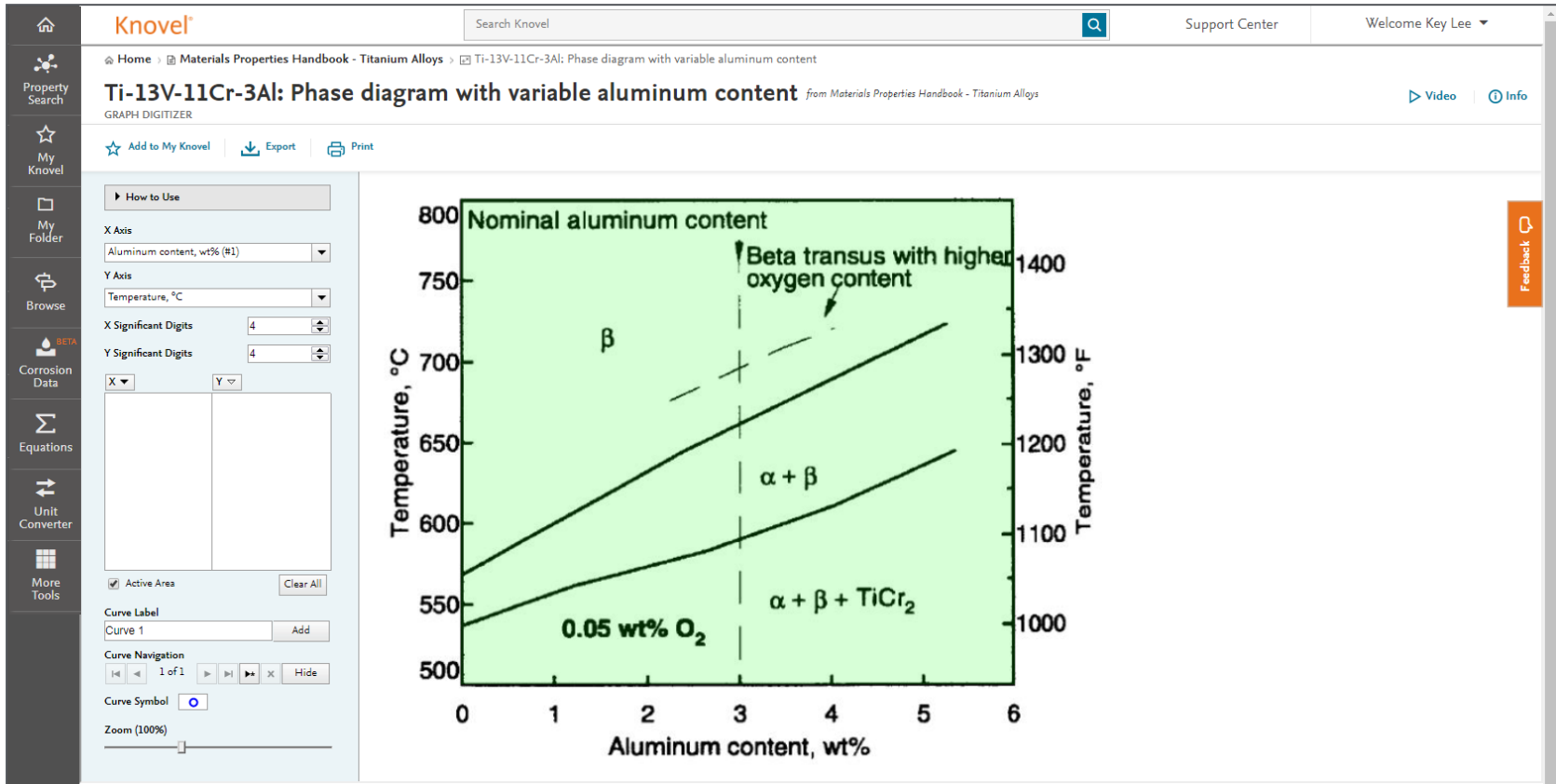
Contents Save Download / Export Citation Unit Converter Unit Conversion BETA Aluminum alloy phase

Rows 1 - 2 of 2 from 3583 Page 1 of 1

graph digitizer	material group	alloy designation	uns no.	trade or common name	x-axis label	y-axis label	graph title	text
<input type="checkbox"/> Open Graph	beta titanium alloys	Ti-13V-11Cr-3Al	R58010	Ti-13-11-3 and B120VCA	Aluminum content, wt%	Temperature, °C	Ti-13V-11Cr-3Al: Phase diagram with variable aluminum content	view text
<input type="checkbox"/> Open Graph	beta titanium alloys	Ti-13V-11Cr-3Al	R58010	Ti-13-11-3 and B120VCA	Aluminum content, wt%	Temperature, °F	Ti-13V-11Cr-3Al: Phase diagram with variable aluminum content	view text

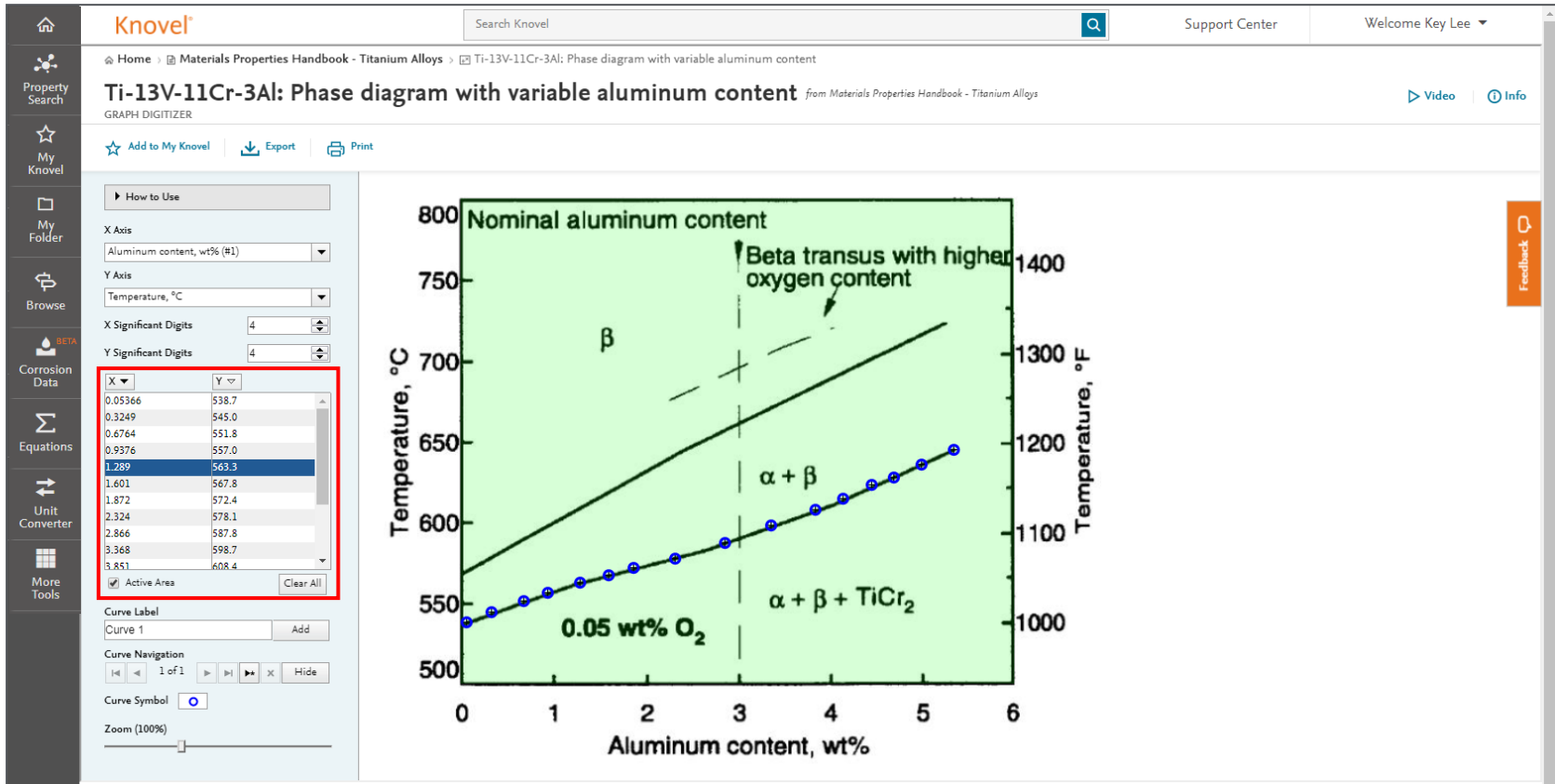
4. 화면에 나타난 표에서는 그래프에 대한 간단한 설명과 x, y 축에 대한 내용에 대해서 언급
5. 오른쪽 'view text' 링크를 클릭하면 해당 그래프에 관한 서적으로 이동하여, 필요한 자료인지 확인할 수 있음
6. 왼쪽에 있는 파란색 아이콘 "Open Graph"를 클릭

Knovel Graphs - 그래프



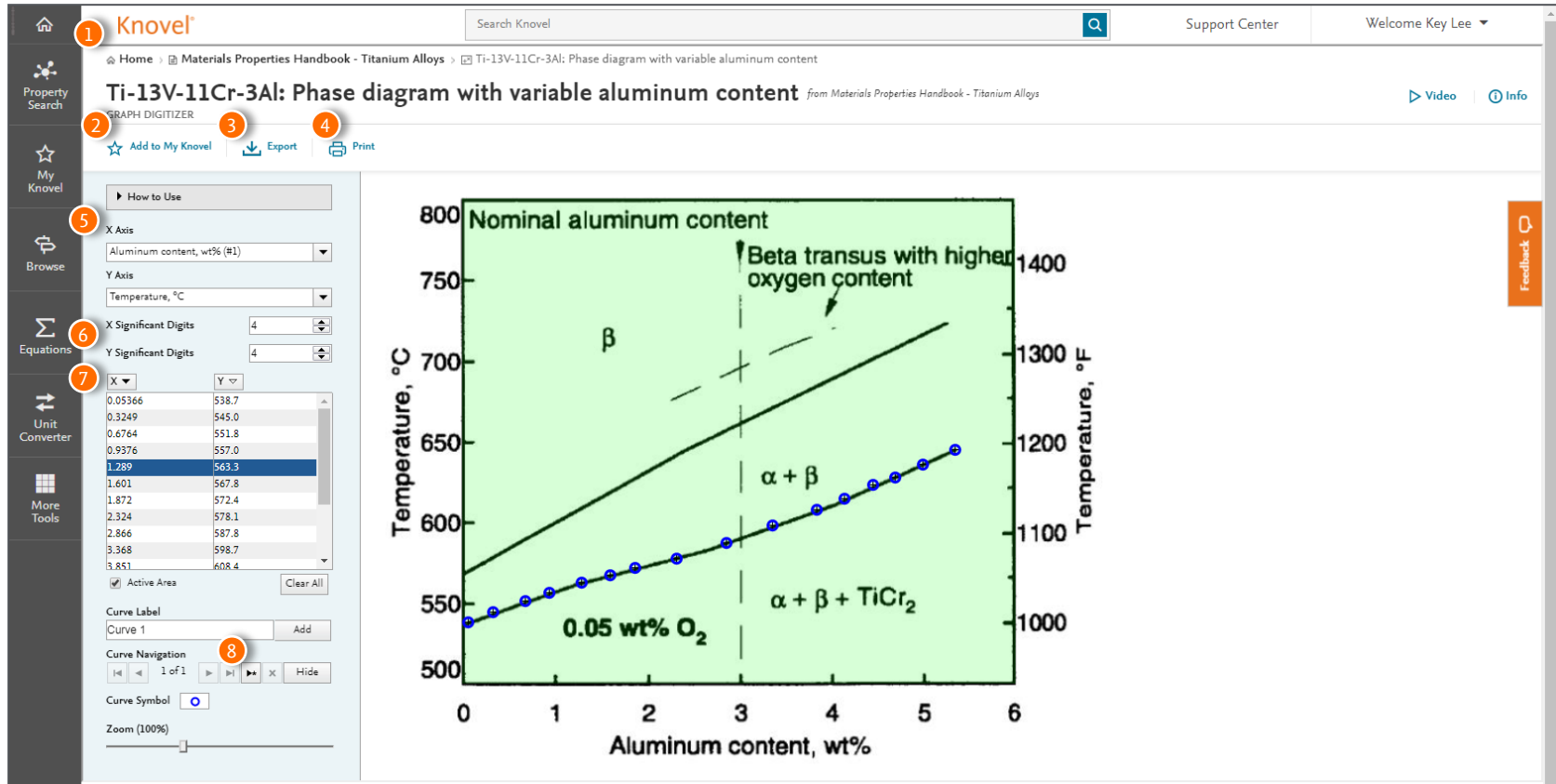
7. 파란색 아이콘 "Open Graph"를 클릭하면 원문에 있는 그래프가 Knovel에 의해 제공됨
8. 제공되는 그래프는 단지 스캔된 그림이 아닌 좌표까지 함께 제공되는 그래프로서, 마우스로 클릭하여 좌표플롯팅이 가능함

Knovel Graphs - 그래프



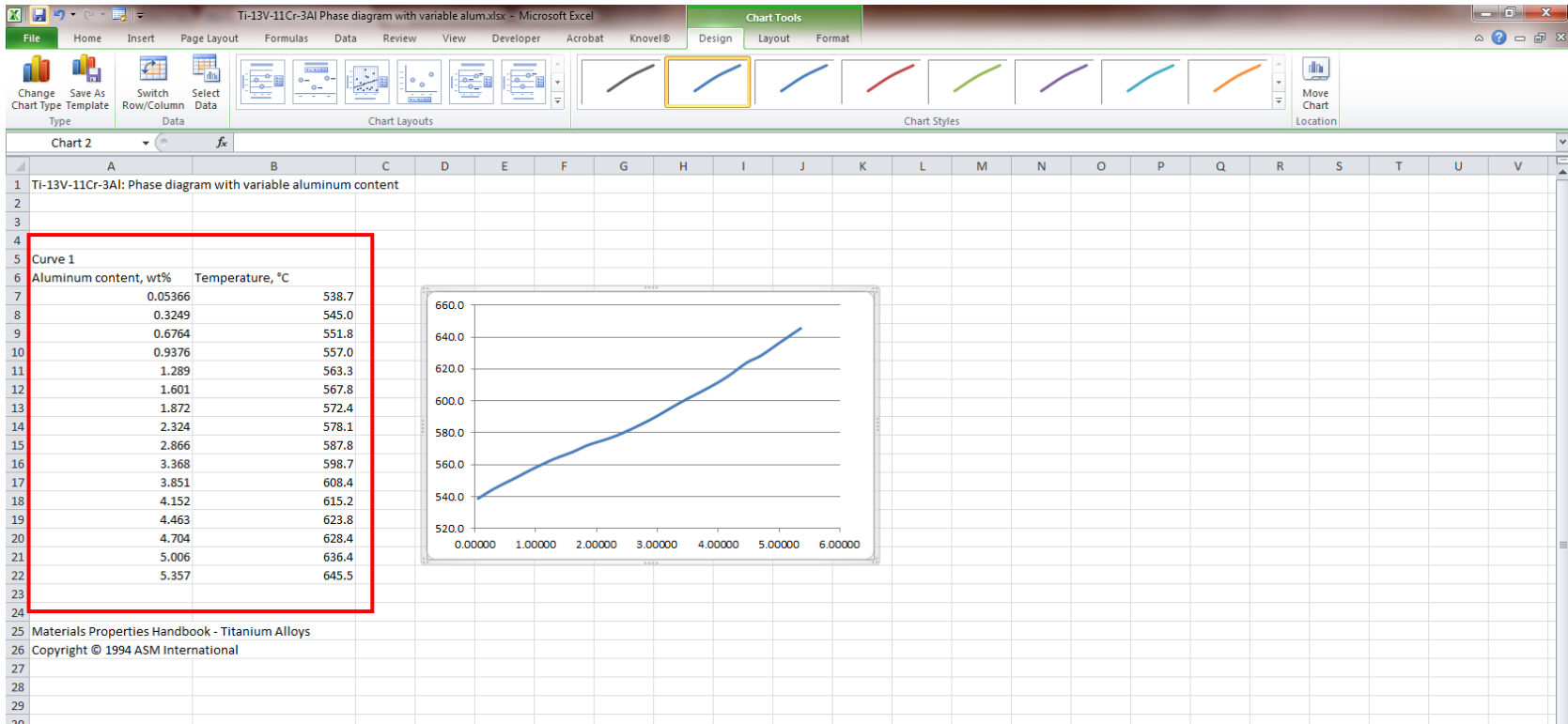
9. 그래프에 마우스로 클릭하는 방식으로 그래프의 좌표를 디지털화
10. 클릭된 좌표는 왼쪽 창에 정리되어 나타나며, 이를 Excel로 내려받기 가능
11. 그래프와 관련된 자세한 기능은 다음장에서 언급

Knovel Graphs - 그래프



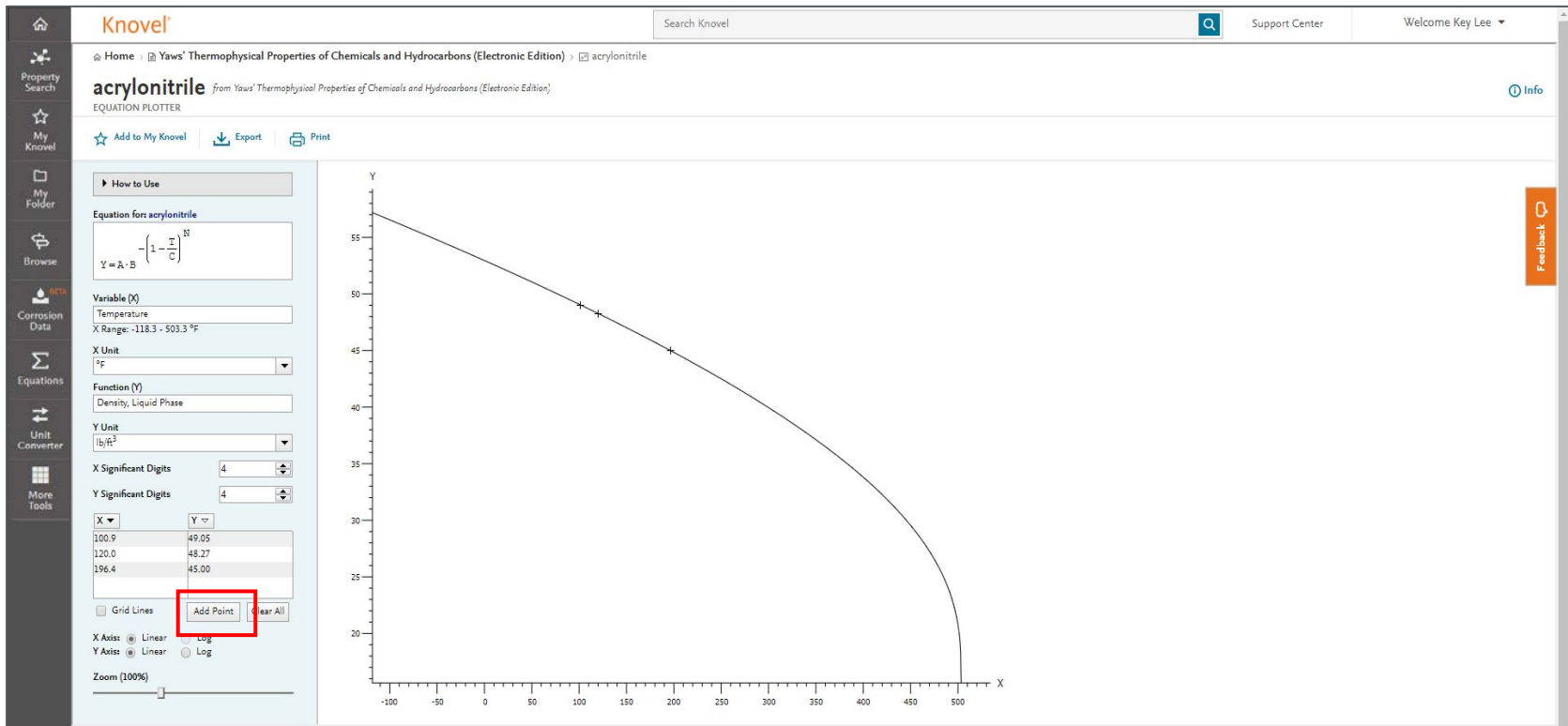
- 사용자 이동경로:** 검색 도구로 사용
- Add to My Knovel:** 개인계정에 저장
- Export:** 클릭된 좌표를 CSV, Excel 파일, 그림파일 등으로 저장
- Print:** 그래프를 출력
- Axis:** 그래프 X, Y축에 대한 설명
- Significant Digit:** 클릭된 좌표축의 자릿수 지정
- 좌표창:** 클릭된 좌표정보를 표시
- New Curve:** 추가로 다른 곡선에 대한 좌표가 필요할 때 새로 생성

Knovel Graphs - 그래프



12. 클릭된 좌표를 엑셀로 내려받기를 하였습니다. 내려받기한 좌표는 엑셀에서 다시 그래프로 생성가능하므로, 연구 중 실험내용이나, 수치해석 결과와 추세선 등의 비교가 가능
13. 주의사항은 일부 원본서적 내 표는 이러한 형태로 변환되지 않은 경우가 있으므로, 기본검색 후 원본내용을 확인하면 보다 많은 내용을 찾을 수 있음

Knovel Graphs - 그래프



14. 앞서 언급한 내용과 다른 형태의 그래프입니다. **Equation Plotter**로서 앞서 언급한 스캔방식의 그래프와 다르게 추세식을 도기한 그래프로서, 클릭하여 좌표를 입력하거나, **Add Point**를 클릭하여 직접 좌표입력 가능
15. **Unit (단위)** 변환도 간단하게 클릭한번으로 변환 가능

Browse

Knovel Browse - 서적검색



The screenshot shows the Knovel website interface. The left sidebar contains navigation options: Home, Property Search, My Knovel, My Folder, Browse (highlighted with a red box), Corrosion Data, Equations, Unit Converter, and More Tools. The main content area features a search bar with 'author: yaws' and a 'Browse' button. Below the search bar are four feature tiles: 'Material Property Search', 'Interactive Graphs', 'Property Table Data', and 'Equations'. The bottom section includes 'Recent Activity', 'Explore Renewable Energy', and 'Solve Equations'.

1. <https://app.knovel.com>에 접속한 후 왼쪽 네번째 메뉴에 표시된 'Browse'를 클릭하면 Knovel에서 제공하는 서적 정보에 대해 검색 가능

Knovel Browse - 서적검색



Browse all Subjects

Technical References **New** Content

All Content My Subscription

Filter on subject names

SUBJECTS

- > Adhesives, Coatings, Sealants & Inks
- > Aerospace & Radar Technology
- > Biochemistry, Biology & Biotechnology
- > Ceramics & Ceramic Engineering
- > Chemistry & Chemical Engineering
- > Civil Engineering & Construction Materials
- > Composites
- > Computer Hardware Engineering
- > Earth Sciences
- > Electrical & Power Engineering
- > Electronics & Semiconductors
- > Engineering Management & Leadership
- > Environment & Environmental Engineering
- > Fire Protection Engineering & Emergency Response
- > Food Science
- > General Engineering & Project Administration
- > Industrial Engineering & Operations Management
- > Manufacturing Engineering
- > Marine Engineering & Naval Architecture
- > Mechanics & Mechanical Engineering
- > Metals & Metallurgy
- > Mining Engineering & Extractive Metallurgy
- > Nanotechnology
- > NIST Thermodynamics Pure Compounds
- > Nondestructive Testing & Evaluation
- > Oil & Gas Engineering
- > Optics & Photonics
- > Pharmaceuticals, Cosmetics & Toiletries
- > Plastics & Rubber
- > Process Design, Control & Automation
- > Regulatory Information
- > Safety & Industrial Hygiene
- > Software Engineering
- > Sustainable Energy & Development
- > Textiles
- > Transportation Engineering
- > Welding Engineering & Materials Joining

INTRODUCTORY

- Knovel Sampler
- Try Knovel

Try Our Mobile App

Download our mobile app to search and read engineering technical references anywhere, even when you're offline.

Learn More

Feedback

2. Knovel에서 제공하는 35개 주제분야를 확인할 수 있음

3. 원하는 주제분야를 선택하여 클릭하면 해당 주제분야에 대한 서적 리스트를 볼 수 있음

Knovel Browse - 서적검색



The screenshot displays the Knovel Browse interface. The breadcrumb trail at the top reads: Home > Browse > Chemistry...ngineering > All Topics. The main heading is 'Chemistry & Chemical Engineering', which is highlighted with a red box. Below this, there are counts for 'References (940)' and 'Equations (269)'. A sidebar on the left lists various technical categories, with 'All Topics (940)' highlighted in a red box. The search bar contains the text 'chemical process', and the results show '14 of 940 titles'. The search results list several books, including 'Applications in Design and Simulation of Sustainable Chemical Processes', 'Chemical Process Equipment - Selection and Design', 'Chemical Process Equipment - Selection and Design (3rd Edition)', and 'Chemical Process Equipment - Selection and Design (Revised 2nd Edition)'. The 'Feedback / Improve Knovel' button is visible on the right side of the page.

4. 'Chemistry & Chemical Engineering' 주제분야를 선택하여 클릭하면 다음과 같은 화면으로 이동
5. 해당 주제분야는 940권의 서적을 보유하고 있음을 확인할 수 있음
6. 'Chemical Process'를 위의 창에서 검색한 결과 해당 주제분야 내에서 Chemical Process가 제목에 포함된 서적이 14권이 검색이 된 것을 확인

Knovel Resource - Book



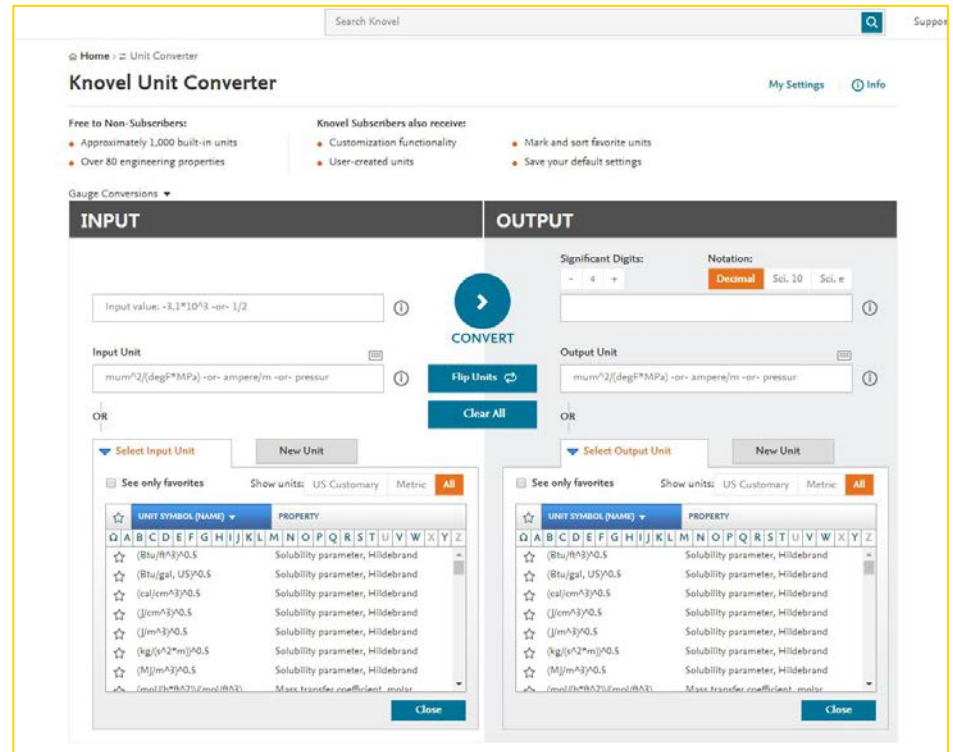
The screenshot shows the Knovel website interface. The main content area displays the title '지속 가능한 화학 공정의 설계 및 시뮬레이션 응용' (Design and Simulation of Sustainable Chemical Processes). Below the title, there is a brief description of the book. To the left, there is a sidebar with navigation options like '부동산 검색', '마이노블', '내 홈', '검색', '부서 데이터', '방정식', '단위 변환기', and '더 많은 도구'. Below the main content, there are sections for '지속 가능한 새로운 ...' (Sustainable new ...) and '12 재료 속성 표' (12 Material Property Tables). The '12 재료 속성 표' section lists various materials and their properties, including '1. 지속 가능한 공정 기술' (Sustainable process technology), '2. 개년적 프로세스 설계에서의 프로세스 시스템 접근' (Process system approach in annual process design), '3. 메탄올' (Methanol), '4. 메탄올에서 올레핀으로의 공정' (Process from methanol to olefins), '5. 올레핀 복분해에 의한 프로필렌' (Propylene by olefin cracking), '6. 이소부텐 이량체화' (Isobutene dimerization), '파트 III. 재생 가능 연료 및 생화학 물질' (Part III. Renewable fuels and biochemicals), '7. 피마자유 바이오리파이너리' (Rapeseed oil biorefinery), '8. 바이오에탄올 및 바이오부탄올' (Bioethanol and bio-butanol), '9. 바이오디젤' (Biodiesel), '10. 디메틸 에테르' (Dimethyl ether), '11. 연료 첨가제' (Fuel additives), and '파트 IV. 산업용 화학 물질' (Part IV. Industrial chemicals).

7. 검색된 서적 중 **Applications in Design and Simulation of Sustainable Chemical Processes**를 선택
8. 앞서 키워드를 사용하여 검색한 **Book**과 동일한 방식의 정보를 제공
9. 해당 화면에서는 서적의 **제목, 설명, 서적정보, 목차** 등이 제공되며, 각 Chapter를 클릭하면 원문확인이 가능함
10. 서적정보도 Chrome을 이용하면 번역된 정보를 확인할 수 있음

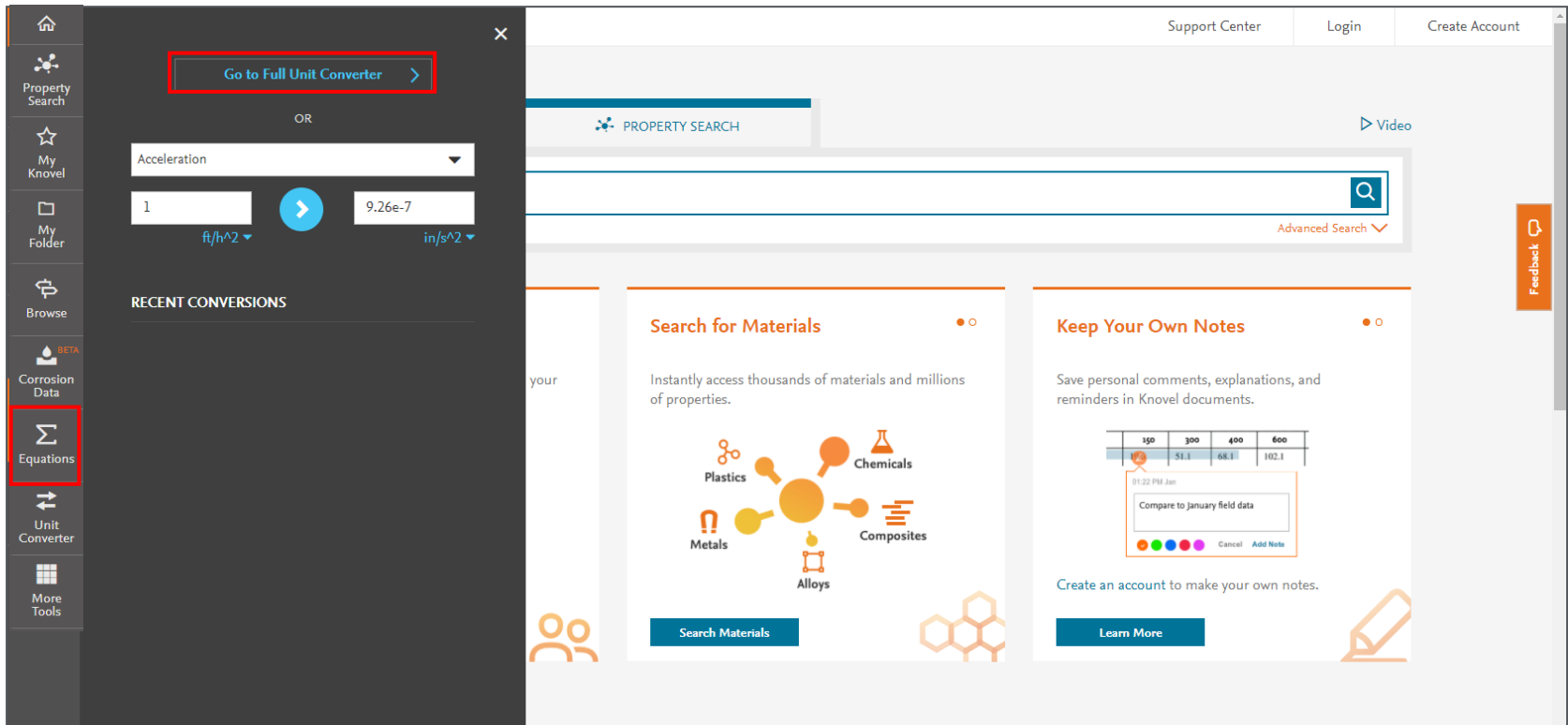
Knovel Tools

Knovel Unit Converter - 단위 변환기

- Knovel은 공학에서 발생하는 복잡한 단위를 변환시킬 수 있는 **단위 변환기** 제공
- Knovel 단위 변환기에서는 다양한 공학용 단위가 수록되어 있으며, **사용자 자신만의 단위 생성 가능**



Knovel Unit Converter - 단위 변환기



The screenshot displays the Knovel website interface. On the left, a dark sidebar contains navigation options: Home, Property Search, My Knovel, My Folder, Browse, Corrosion Data (marked BETA), Equations (highlighted with a red box), Unit Converter, and More Tools. The main content area features a search bar with 'PROPERTY SEARCH' and a 'Video' link. Below the search bar, there are two main sections: 'Search for Materials' and 'Keep Your Own Notes'. The 'Search for Materials' section includes a diagram with categories: Plastics, Chemicals, Metals, Composites, and Alloys. The 'Keep Your Own Notes' section shows a table with data points and a note titled 'Compare to January field data'.

1. <https://app.knovel.com>에 접속한 후 왼쪽 다섯번째 메뉴에 표시된 'Unit Converter'를 클릭하면 Knovel에서 제공하는 간단한 단위변환기를 사용할 수 있습니다.
2. 간단한 단위변환기 상부의 'Go to Full Unit Converter'를 클릭하면 완전한 단위변환기에 접속할 수 있습니다.

Knovel Unit Converter - 단위 변환기



Knovel Search Knovel Support Center Welcome Key Lee

Free to Non-Subscribers:

- Approximately 1,000 built-in units
- Over 80 engineering properties

Registered Knovel users also receive:

- Customization functionality
- User-created units
- Mark and sort favorite units
- Save your default settings

My Settings Info

Gauge Conversions

INPUT

1 Input value:

2 Input Unit:

OR

3 Select Input Unit

4 See only favorites

5 Show units: US Customary Metric All

UNIT SYMBOL (NAME)	PROPERTY
(Btu/ft^3)^0.5	Solubility parameter, Hildebrand
(Btu/gal, US)^0.5	Solubility parameter, Hildebrand
(cal/cm^3)^0.5	Solubility parameter, Hildebrand
(J/cm^3)^0.5	Solubility parameter, Hildebrand
(J/m^3)^0.5	Solubility parameter, Hildebrand
(kg/(s^2*m))^0.5	Solubility parameter, Hildebrand
(MJ/m^3)^0.5	Solubility parameter, Hildebrand
(mol/(h*ft^2))/(mol/ft^3)	Mass transfer coefficient, molar

OUTPUT

Significant Digits: - 4 +

Notation: Decimal Sci. 10 Sci. e

Output Unit:

OR

3 Select Output Unit

4 See only favorites

5 Show units: US Customary Metric All

UNIT SYMBOL (NAME)	PROPERTY
(Btu/ft^3)^0.5	Solubility parameter, Hildebrand
(Btu/gal, US)^0.5	Solubility parameter, Hildebrand
(cal/cm^3)^0.5	Solubility parameter, Hildebrand
(J/cm^3)^0.5	Solubility parameter, Hildebrand
(J/m^3)^0.5	Solubility parameter, Hildebrand
(kg/(s^2*m))^0.5	Solubility parameter, Hildebrand
(MJ/m^3)^0.5	Solubility parameter, Hildebrand
(mol/(h*ft^2))/(mol/ft^3)	Mass transfer coefficient, molar

CONVERT Flip Units Clear All

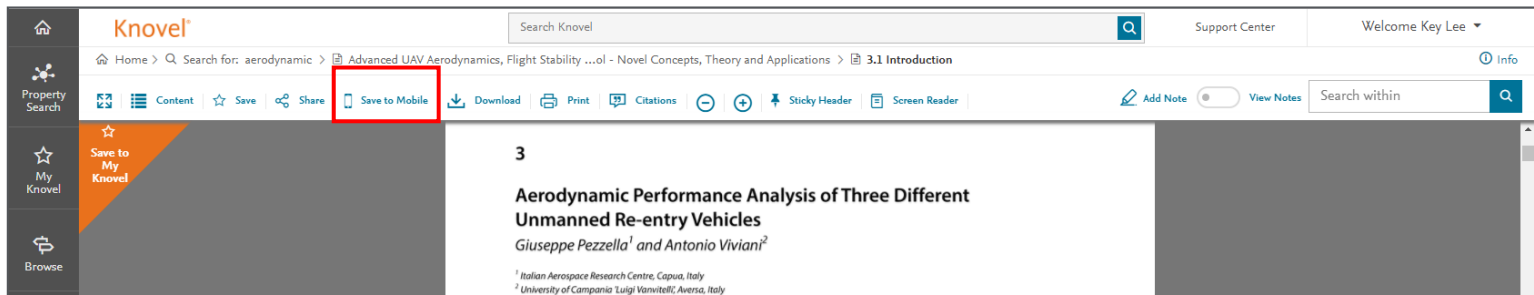
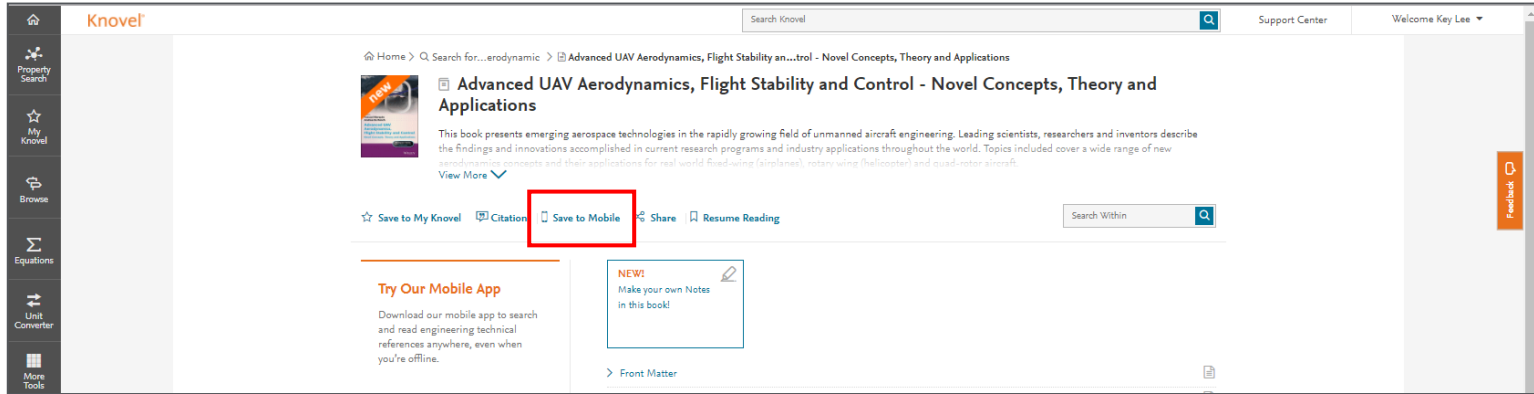
1. **Value:** 수치 입력
2. **Unit:** 단위 직접 입력
3. **Select (Input, Output) Unit:** 제공 단위
4. **Unit Symbol:** 단위 이름 순으로 정렬
5. **Property:** 단위 특성 순으로 정렬

Knovel ToGo: 모바일용 e-book 플랫폼

- 연구자가 외부에서 Knovel의 서적을 읽을 수 있도록 Knovel ToGo App을 개발
- 모바일 기기당 한 달에 20권 다운가능 (동시 보관은 3권으로 제한)
- 보관기간은 30일
- Android, Apple 앱스토어에서 앱을 무료로 다운 후 휴대폰 및 태블릿에서 활용 가능
- 이용을 위해서는 ID/PW 사용



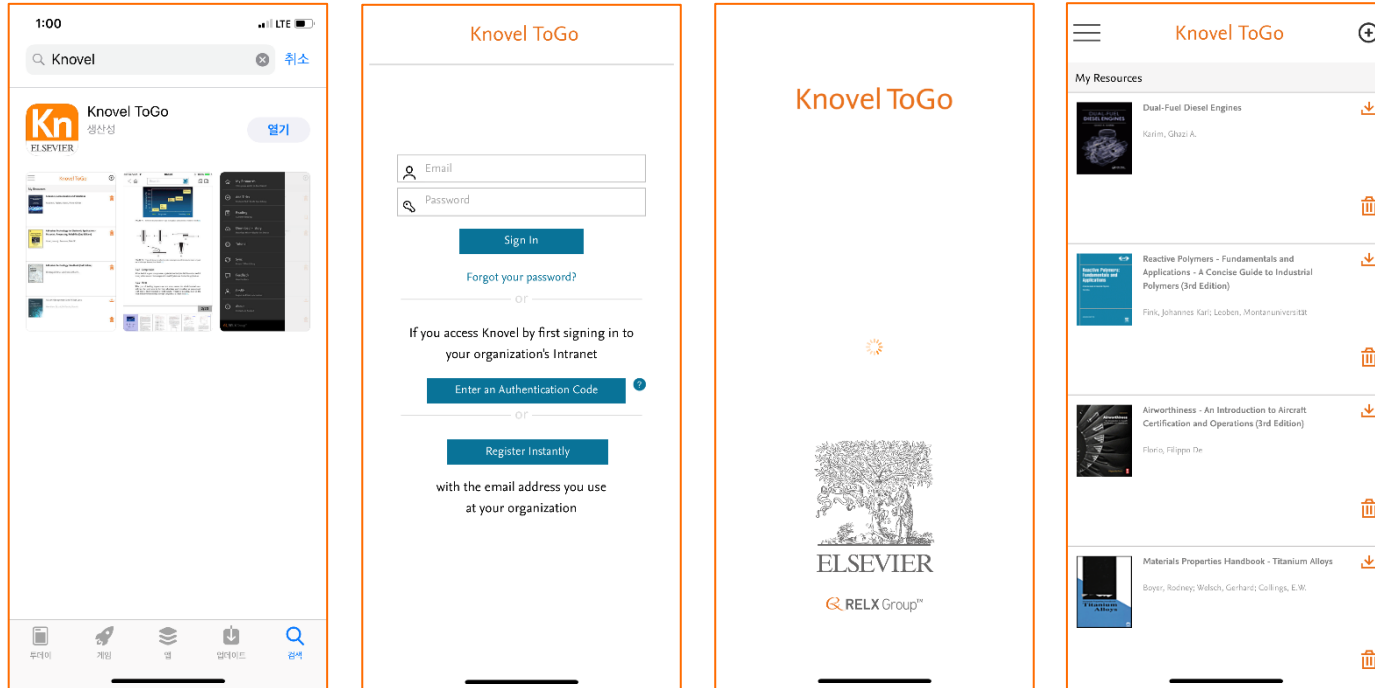
Knovel ToGo: 모바일용 e-book 플랫폼



1. 검색 결과 중 'Save to Mobile' 를 클릭하면 모바일 환경에서도 Knovel 내 서적을 활용가능
2. My Knovel ToGo는 계정등록이 완료된 유저만 접속가능



Knovel ToGo: 모바일용 e-book 플랫폼



3. **My Knovel ToGo**를 Android, Apple 앱스토어에서 무료로 다운 가능
4. 다운받은 앱을 실행하면 두번째 화면이 나타남
5. 계정은 **본인의 등록계정**(예, abc@elsevier.com) 과 비밀번호를 이용



신개념 기술전자도서관 Knovel의 소개와 활용

2022-07-20



ELSEVIER

감사합니다

Elsevier Engineering Team
이기혁

